THE JOURNAL OF

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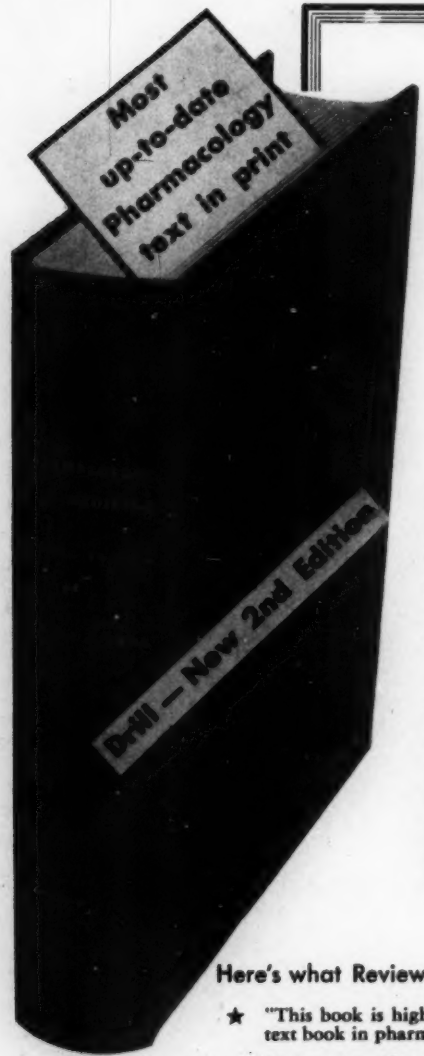

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Medical Education Forum includes editorials, letters, comments, criticisms, and excerpts from important addresses.

News from the Medical Schools: Material for this section should be transmitted to the News Editor, Mr. Tom Coleman, 2530 Ridge Avenue, Evanston, Illinois. Announcements of major faculty and administrative appointments, news of distinguished visitors and significant educational developments will be included. It is not possible to publish notices on grants-in-aid for scientific research.

Items of Current Interest: Audio-visual news and notices from national and federal agencies appear in this section.

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Calendar of Meetings

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AMERICAN COLLEGE OF CARDIOLOGY, INTERIM MEETING, Jung Hotel, New Orleans, La., Nov. 20–22. Dr. Philip Reichert, Empire State Bldg., New York 1, Secretary.

ASSOCIATION OF MILITARY SURGEONS OF THE U.S., Hotel Statler, Washington, D.C., Nov. 17–19. Col. Robert E. Bitner, 1726 Eye St., N.W., Washington 6, D.C., Secretary.

INTERNATIONAL COLLEGE OF SURGEONS, Mid-Atlantic Sectional Meeting, The Homestead, Hot Springs, Va., Nov. 16–18. Dr. E. G. Gill, 711 S. Jefferson St., Roanoke, Va., Chairman.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN & ADULTS, Statler Hilton Hotel, Dallas, Tex., Nov. 16–20. Miss Catharine Bauer, 11 S. LaSalle St., Chicago 3, Director of Information.

PUERTO RICO MEDICAL ASSOCIATION, Santurce, P.R., Nov. 18–22. Mr. J. A. Sanchez, Box 9111, Santurce 29, P.R., Executive Secretary.

RADIOLOGICAL SOCIETY OF NORTH AMERICA, Palmer House, Chicago, Nov. 16–21. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N.Y., Secretary.

UNITED STATES SECTION, INTERNATIONAL COLLEGE OF SURGEONS, MID-ATLANTIC REGIONAL MEETING, The Homestead, Hot Springs, Va., Nov. 17–18. For information address: Dr. Elbryne G. Gill, 711 Jefferson St., S., Roanoke 13, Va.

DECEMBER

AMERICAN ACADEMY OF DERMATOLOGY AND SYPHILOLOGY, Palmer House, Chicago, Dec. 6–11. Dr. R. R. Kierland, Mayo Clinic, Rochester, Minn., Secretary.

AMERICAN MEDICAL ASSOCIATION, CLINICAL MEETING, Hotel Leamington, Minneapolis, Dec. 2–5. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASES, Hotel Roosevelt, New York, Dec. 12–13. Dr. Rolle J. Masselink, 700 W. 168th St., New York 32, Secretary.

JANUARY 1959

AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS, Palmer House, Chicago, Jan. 24–29. Dr. Clinton L. Compere, 720 N. Michigan Ave., Chicago 11, Secretary.

INTERNATIONAL COLLEGE OF SURGEONS, SOUTHEASTERN REGIONAL MEETING, Miami Beach, Fla., Jan. 4–7. Dr. Harold O. Hallstrand, 7210 Red Road, South Miami, Fla., Chairman.

INTERNATIONAL MEDICAL ASSEMBLY OF SOUTHWEST TEXAS, Gunther Hotel, San Antonio, Tex., Jan. 26–28. Mr. S. E. Cockrell, Jr., 202 W. French Pl., San Antonio, Tex., Executive Secretary.

ROCKY MOUNTAIN TRAUMATIC SURGICAL ASSOCIATION, Aspen, Colo., Jan. 28–31. Dr. Charles B. Bartell, 1600 Orange Ave., Long Beach 13, Calif., Secretary.

WESTERN SOCIETY FOR CLINICAL RESEARCH, Carmel-by-the-Sea, Calif., Jan. 29–31. Dr. William N. Valentine, University of California Medical Center, Los Angeles 24, Secretary.

FEBRUARY

AMERICAN ACADEMY OF ALLERGY, Morrison Hotel, Chicago, Feb. 9–11. Dr. Bram Rose, Royal Victoria Hosp., Montreal, Quebec, Secretary.

AMERICAN ACADEMY OF OCCUPATIONAL MEDICINE, Boston, Feb. 11–13. Dr. L. Blaney, 1608 Walnut St., Philadelphia 3, Secretary.

AMERICAN COLLEGE OF RADIOLOGY, Drake Hotel, Chicago, Feb. 6–7. Mr. William C. Stronach, 20 N. Wacker Dr., Chicago 6, Executive Director.

CALIFORNIA MEDICAL ASSOCIATION, Sheraton-Palace Hotel, San Francisco, Feb. 22–25. Mr. John Hunton, 450 Sutter St., San Francisco 8, Executive Secretary.

MARCH

AMERICAN COLLEGE OF ALLERGISTS, Fairmont Hotel, San Francisco, Mar. 15–20. Dr. M. Coleman Harris, 450 Sutter St., San Francisco, Secretary.

AMERICAN LARYNGOLOGICAL ASSOCIATION, The Homestead, Hot Springs, Va., Mar. 8–9. Dr. James H. Maxwell, University Hospital, Ann Arbor, Mich., Secretary.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL & OTOLOGICAL SOCIETY, The Homestead, Hot Springs, Va., Mar. 10–12. Dr. C. Stewart Nash, 708 Medical Arts Bldg., Rochester 7, N.Y., Secretary.

AMERICAN ORTHOPSYCHIATRIC ASSOCIATION, Sheraton-Palace Hotel, San Francisco, Mar. 30–Apr. 1. Dr. Marion F. Langer, 1790 Broadway, New York 19, Executive Secretary.

AMERICAN OTOLOGICAL SOCIETY, The Homestead, Hot Springs, Va., Mar. 13–14. Dr. Lawrence R. Boles, University Hospital, Minneapolis 14, Secretary.

MICHIGAN ACADEMY OF GENERAL PRACTICE, POST-GRADUATE CLINIC, Sheraton-Cadillac Hotel, Detroit, Mar. 5. Dr. F. P. Rhoades, 970 Maccabees Bldg., Detroit 2, Convention Manager.

INTERNATIONAL AND FOREIGN

NOVEMBER

BAHAMAS MEDICAL CONFERENCE, British Colonial Hotel, Nassau, Bahamas, Nov. 28–Dec. 18. For information write: Dr. B. L. Frank, 23 E. 79th St., New York 21, New York, U.S.A.

PAKISTAN MEDICAL CONFERENCE, Dacca, East Pakistan, Nov. 23–27. Dr. K. S. Alam, 35, Nazimuddin Road, Dacca, East Pakistan, Conference Secretary.

DECEMBER

BAHAMAS SURGICAL CONFERENCE, British Colonial Hotel, Nassau, Bahamas, Dec. 29–Jan. 17. For information write: Dr. B. L. Frank, 23 E. 79th St., New York 21, New York, U.S.A.

FEBRUARY 1959

CENTRAL SURGICAL ASSOCIATION, Montreal, Can., Feb. 19–21, Dr. A. D. McLachlin, Victoria Hosp., London, Ontario, Secretary.

SOCIETY OF UNIVERSITY SURGEONS, Denver, Colo., Feb. 12–14. Dr. James D. Hardy, Univ. Medical Center, Jackson, Miss., Secretary.

APRIL

CONGRESS OF INTERNATIONAL ANESTHESIA RESEARCH SOCIETY, Miami Beach, Fla., U.S.A., Apr. 20–23. Dr. A. William Friend, East 107 & Park Lane, Cleveland 6, Ohio, U.S.A., Executive Secretary.

Faust and Russell—Craig and Faust's Clinical Parasitology

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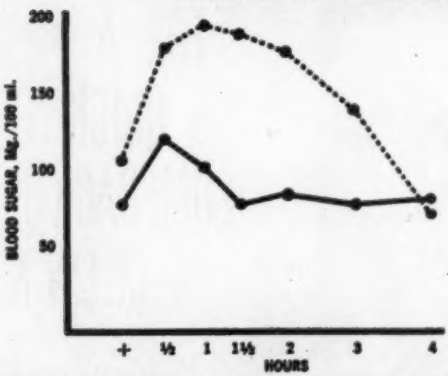

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Sources—1. Joslin, E. P.; Root, H. F.; White, P., and Marble, A.: The Treatment of Diabetes Mellitus, ed. 9, Philadelphia, Lea & Febiger, 1952, p. 156. 2. Hennes, A. R.; Wajchenberg, B. L.; Fajans, S. S., and Conn, J. W.: Metabolism 6:339, 1957.

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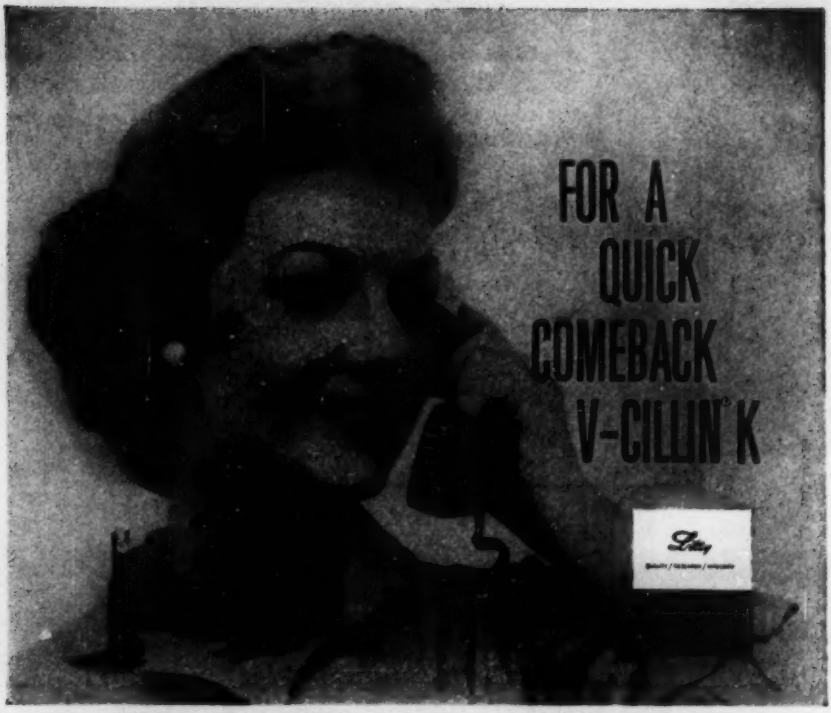

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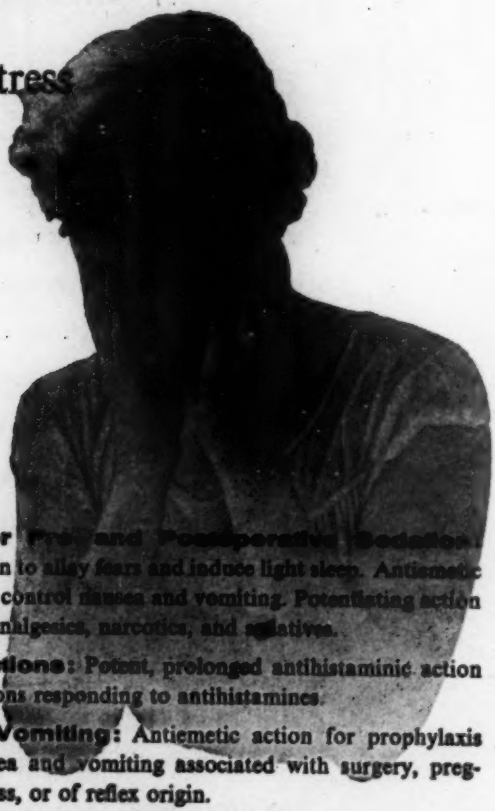

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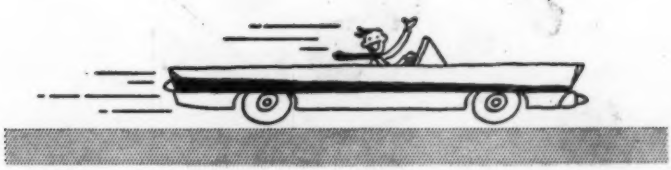

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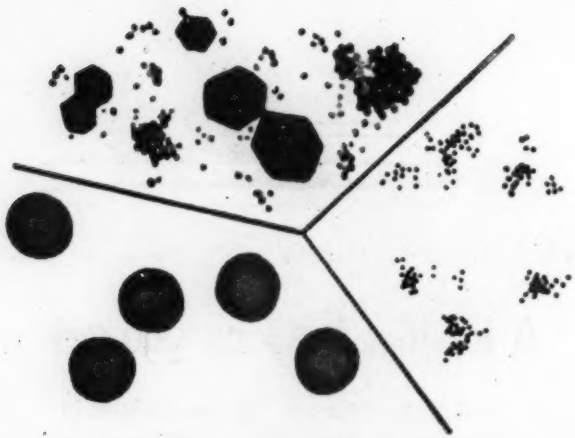

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The American University of Beirut School of Medicine

JOSEPH J. McDONALD, M.D.*
School of Medicine, The American University of Beirut, Beirut, Lebanon

EARLY HISTORY

The American Board of Foreign Missions began operating in the region known as Syria, Lebanon, and Palestine in 1820, and by 1860 had established 33 schools. In 1862 Reverend Daniel Bliss was asked to withdraw from evangelical work to found a school of higher learning which would include medical training. It was felt this college should have an American charter and be independent of the Mission. Accordingly, Dr. Bliss traveled to the United States, and on April 24, 1863, the State of New York granted a charter for the new school which was to be known as the Syrian Protestant College. Despite difficulties imposed by the Civil War, Dr. Bliss succeeded in raising $100,000 in American and over £S. 7,000 in Great Britain.[1] Dr. Bliss was appointed president of the college, which opened in the autumn of 1866 with a class of sixteen students, and the medical school opened the following year with a class of fourteen students.

The institution was founded during a period of relative political quiet in an area which had experienced conflicts of world interests for at least 6,000 years. By 1820 the Ottoman Turkish Empire had dominated the Middle East for three centuries and was beginning to crumble. Mohammed Ali had become ruler of Egypt in 1801 after the evacuation of Napoleonic troops, and in 1833 Turkey lost control of Syria and Lebanon when Mohammed Ali's son, Ibrahim Pasha, conquered the Turkish forces and made himself governor. In 1841, however, England, fearing a strong Arab empire would endanger its trade routes to India, overthrew Ibrahim Pasha with the result that Syria and Lebanon reverted to Ottoman control. Periodic unrest continued. In 1860 when civil war occurred in Lebanon and Syria the French landed forces, and a Joint Commission of Great Powers[2] introduced a new administrative system. The district of Lebanon then obtained a degree of autonomy with a Christian governor appointed by the Turkish Sultan and responsible to him, but requiring the approval of the European ambassadors in Constantinople (now Istanbul).

The early history of the medical school is inseparable from that of three outstanding professors who helped found the school in 1867 and guide it during the first 15 years. These three men were Dr. Cornelius V. A. Van Dyck, Dr. George E. Post, and Dr. John Wortabet. At first teaching was in Arabic, so each professor translated medical texts and lectures into Arabic. Until arrangements were completed to publish the translations, students were obliged to copy them in lieu of textbooks.

Dr. Van Dyck had been in the Middle

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EDITOR'S NOTE: The Medical School of the American University of Beirut was voted into membership in the A.A.M.C. in October, 1957. Because of the fascinating background of the development of this Medical School, Dean Joseph McDonald was asked to prepare this article. It is our aim to seek somewhat similar articles describing the development and program of other medical schools as they become members of the A.A.M.C.

[1] The British support, equivalent to about $36,000 in gold, was particularly helpful because it enabled the college to commence and carry on until the $100,000 in devalued American greenbacks returned to par.

[2] England, France, Turkey, Russia, Austria, Prussia, and Italy.

MEDICAL BUILDINGS OF THE AMERICAN UNIVERSITY OF BEIRUT VIEWED FROM THE UNIVERSITY HOSPITAL

Right foreground, the outpatient building; center background, the basic science building—Van Dyck Hall; left background, the original medical building now used by social science departments.

VIEW OF VAN DYCK HALL, THE BASIC SCIENCE BUILDING OF THE AMERICAN UNIVERSITY OF BEIRUT SCHOOL OF MEDICINE WITH BEIRUT HARBOR AND THE MOUNTAINS OF LEBANON IN THE BACKGROUND

East for 27 years prior to the founding of the school and was an outstanding Arabic scholar. He taught chemistry, pathology, internal medicine, and ophthalmology. Dr. Post was a surgeon of great skill who also taught botany and materia medica. His botanical study "The Flora of Syria and Palestine" (1884) still remains a standard reference work. With architecture as an avocation, Dr. Post designed and superintended the construction of the original medical building as well as a science building which still bears his name. Dr. John Wortabet was born in Lebanon, the son of an Armenian priest. He had received theological training in Scotland and medical training at the New York University Medical College before taking up his position as professor of anatomy, physiology, public health, and the practice of medicine. Each of these three unusual men gave full time to the teaching of a 4-year medical course to a compact student body at a time when most medical schools in American offered a 2-year course given by part-time practitioners.[3]

During the first 15 years the faculty was increased by several teaching assistants from its alumni and three additional full-time members: Professor Edwin R. Lewis began teaching chemistry in 1870; Dr. Richard W. Brigstocke, an able British obstetrician and gynecologist, joined the faculty in 1880; and Dr. William T. Van Dyck, a son of Dr. Cornelius Van Dyck, also joined the faculty in 1880. It may be wondered how such a small group could maintain a medical school with high standards; but with devoted full-time professors it is probable that the student of that day had more individual attention than is achieved in many good medical schools at present.

[3] At the second annual meeting of the American Medical College Association in 1877 an attempt to raise the minimum period of study in American medical colleges to three years proved premature, and the resulting controversy led to a suspension of meet ngs from 1883 through 1889. In 1891 a minimum requirement of three years was generally adopted in the United States, but it was not until 1899 that graduates were required to complete four years of medical training to comply with the articles of the reconstituted Association of American Medical Colleges—see History of the Association of American Medical Colleges 1876–1956 by Dean F. Smiley, *Journal of Medical Education*, 32:512–525, July, 1957.

GROWTH AND CRISES

The 91 years of growth and development of the medical school have not been without crises. In 1882 Professor Edwin R. Lewis gave a commencement address favoring the theories of Darwin. The board of trustees and the non-medical faculty were so offended that Professor Lewis was forced to resign. All the full-time members of the medical faculty joined with their resignations except for Dr. Post. Many of the medical students also rebelled and were temporarily suspended, so it appeared that the career of the flourishing young medical school might suddenly be brought to an end.

Although there was doubt for a time about the wisdom of maintaining the medical school, within a few months so much favorable pressure was brought to the board of trustees by the university administration, missionaries in the area, and other friends of the college that the trustees proceeded at once to fill the vacancies on the faculty. Three new professors arrived in time for the opening of the academic year 1883–84. In the meantime, Dr. Cornelius Van Dyck and Dr. Lewis had helped sustain the rebellious students by instructing them outside the college, so that most of them were reinstated in 1883.[4]

Thus the medical school weathered its first serious crisis. A significant side effect, however, was a change in the language of instruction from Arabic to English, because the new professors did not know Arabic and did not have time to learn it before beginning their duties. English had already become the language of instruction in the collegiate and preparatory departments, so the transition was not a difficult one. Also, by

[4] The subsequent activities of the five professors who resigned in 1882 are of interest. Dr. Cornelius Van Dyck remained in Beirut until his death in 1895 and helped found the St. Georges Hospital. Professor Lewis presumably left the Middle East in 1883. Dr. John Wortabet continued to serve the medical school as a part-time lecturer and later as chief physician of the Lebanon Hospital for Mental Disorders, an affiliated institution founded in 1900. Dr. Richard Brigstocke continued his practice in Beirut independent of the institution. Dr. William T. Van Dyck also continued practice in Beirut and returned to the faculty in 1915, remaining until his death in 1939.

this time the growth of medical literature had become so rapid that the original textbooks were becoming outmoded, and keeping up Arabic translations was an insurmountable task. It is probable that the change in language would have taken place within a short time even if the faculty revision had not occurred.

The subsequent growth and expansion of the medical school are due to the efforts of many individuals, and it would be impossible to give credit to all of them within a short essay. Nonetheless, several outstanding members of the faculty deserve mention. Five of them (with an average tenure of 31 years) may be considered as the core of a second generation of dedicated leaders. They were Drs. Harris Graham, Walter B. Adams, Franklin T. Moore, Charles A. Webster, and Harry G. Dorman. Together with an increasing number of locally trained staff they carried the school through the end of the 19th century and well into the 20th century, a period when major adjustments in medical education took place. This group was chiefly responsible for the early development of the university hospital founded in 1905.

The 1914–18 war presented the medical school with another serious crisis, but the school continued under great difficulties in spite of being an American institution located within alien territory. The Turkish leader Jamal Pasha and other commanders of the Turkish forces were favorably impressed when they found graduates of the American medical school willing to serve in the typhus wards and in the front-line dressing stations. It was Jamal Pasha who refused to permit the school to be closed when America entered the war. Thirty-two medical graduates gave up their lives in active service during the war. Both Dr. Graham and Dr. Webster, Canadian by nationality and technically enemies of Turkey, were permitted to practice and teach freely in Beirut during the war and were called frequently to minister to high officials and their families. With locally trained associates these men were able to keep the medical school going until the armistice permitted return of their overseas colleagues.

Following the war renewed interest in the university and its medical school was taken by the trustees and many supporters. The war had brought famine, political chaos, and severe hardship to the Middle East. The Treaty of Lausanne established a mandate system which was to prepare the dismembered segments of the Ottoman Empire for autonomous rule. The new countries of Lebanon, Syria, Iraq, Palestine, and Transjordan looked to the university to train leaders in every field of public life.

Changes of time had caused the name Syrian Protestant College to become outmoded. The institution was no longer a college; it was no longer Syrian; and its large enrollment of students of all denominations made it no longer appropriate to call it Protestant. After considerable discussion among the board of trustees, the board of regents, and the faculty, the board of regents of New York State amended the charter on November 18, 1920, and the institution became known as the American University of Beirut.

It was during this postwar period that the Rockefeller Foundation, in particular, began its continuing guidance and assistance with periodic grants which have enabled the medical school to improve markedly its physical plant and teaching staff. Dr. E. St. John Ward, medical dean, played an important role in the reorganization. What might be considered as a third generation of leaders from the West joined the faculty at this time, including Drs. William D. Cruikshank, Edward L. Turner, Bennett F. Avery, William M. Shanklin, Stanley E. Kerr, and George H. Miller. The average tenure for this group has been 25 years.

The second World War presented the institution with yet another serious crisis. Lebanon was again for a time under the control of opponents of the United States, the Vichy French. A large number of locally trained graduates held faculty positions, so the teaching program could be maintained with less difficulty during the absence of a

majority of the overseas staff. Dean George H. Miller and four overseas nurses remained in Beirut until 1943 or longer, while several other faculty members, evacuated with their families in 1941, returned in 1943. The people of the region and the occupying power again derived benefits from the medical school, not only through medical services rendered, but also from the production of vaccines by the bacteriology department upon which the local government had long relied.

Because of the international nature of its faculty and student body, increased tensions were experienced by the university during and following the partition of Palestine in 1947–48 and the Suez crisis in 1956. However, these events did not seriously affect the medical school. The Lebanese political crisis which began in May, 1958, brought renewed tensions to the campus. Students again showed a high degree of maturity and faculty members effective leadership, which made it possible to complete the academic year without incident.

MAINTENANCE OF STANDARDS

From its beginning the medical school demanded high levels of academic and professional accomplishment from students before granting degrees. Of fourteen members in the first entering class, nine completed the 4-year course, but only six were successful in passing the comprehensive examinations covering the entire period of training. The three students who failed could hardly understand how they should have passed the previous tests and fail at the final comprehensive examinations. The method and thoroughness of the examinations had a salutory effect upon students and the prestige of the college rose, for it was appreciated that the standards were rigid and impartial.

Even with an elegant university diploma in his hands the Beirut medical graduate of 1871, and for three decades thereafter, was not permitted to practice legally within the Turkish Empire unless he went to Constantinople to obtain an imperial diploma. From the beginning President Daniel Bliss had attempted to obtain full recognition of the college by the Ottoman Government, and, although the institution became recognized as a branch of the Imperial College, medical graduates still had to go to Constantinople. They could go and return at the expense of the Turkish government and receive the imperial diploma after completing an examination and paying the usual fee of 5 pounds. Some medical graduates were able to make the trip, while others went directly into practice without the blessing of an imperial diploma. Those who settled in regions badly in need of physicians had no trouble, but some who attempted to practice in more competitive areas at times found themselves confronted with malpractice charges. In 1902 the newly appointed second president of the college, Dr. Howard Bliss, renewed efforts to obtain full recognition of medical graduates. Finally in 1903, with support from President Roosevelt and the State Department, the venerable Dr. George E. Post, one of the original professors, succeeded in persuading the Ottoman Government to send an imperial examining commission to Beirut annually so that medical students might obtain their diplomas and license with less difficulty.

Although no formal pre-medical course was required to enter the medical school in the early years, in 1872 the importance of a broad educational background was appreciated by the administration when candidates were encouraged to complete college before starting the medical course. In that year approximately one third of the students enrolled in the medical school had come from the collegiate section.

The establishment of French control over Syria and Lebanon after World War I brought new problems to the medical school. To comply with French educational requirements it was necessary to add a fifth year of hospital experience to the medical course. Thus, after 1924 degrees were given only upon completion of 5 years of medical study. For a time some students spent their fifth year at the University of either Montpellier

or Lyon, and the medical degree at the American University of Beirut was given upon receipt of evidence that the final year's work had been satisfactorily completed. Later, as hospital facilities in Beirut improved, all medical students were able to complete their fifth year in Lebanon.

When Lebanon became an independent republic in 1943, the fifth year of hospital work remained a requirement for the medical degree. In 1951 the final year in the medical school was increased from a 9-month academic year to an 11-month year of hospital training and is recognized as equivalent to a rotating internship. Medical graduates entering the residency program of the university hospital now begin at the level of assistant resident. The medical degree of the university has been accepted by licensing boards in virtually all states in America as well as in the United Kingdom. The school was on the approved list of foreign schools of the American Medical Association until this listing was discontinued in 1956 in preparation for a revised system recently established by joint action of various accrediting bodies and known as the Educational Council for Foreign Medical Graduates.

In recent years the medical school has devoted considerable effort toward improving the curriculum and raising standards, not only in keeping with the requirements of the New York Board of Regents, but by following the lead of progressive American schools and the Association of American Medical Colleges. Faculty representatives have frequently attended the annual meetings and teaching institutes of the Association of American Medical Colleges, and in October, 1957, the medical school became an institutional member of the Association. The installation of a chapter of the medical honor society Alpha Omega Alpha in May, 1958, placed additional emphasis upon scholarly achievement.

THE STUDENT BODY AND ALUMNI

Students have been drawn to the university from many lands, and in recent years an average of 50 nationalities and twenty different religious groups have been present among the student body. When Daniel Bliss laid the cornerstone of the first campus building on the new site in 1871, as president of a non-sectarian institution he stated: "This college is for all conditions and classes of men without regard to color, nationality, race or religion. A man white, black, or yellow; Christian, Jew, Mohammedan, or heathen, may enter and enjoy all the advantages of this institution for 3, 4 or 8 years; and go out believing in one God, in many gods or in no God. But it will be impossible for anyone to continue with us long without knowing what we believe to be the truth and our reasons for that belief."

During the first three decades enrollment in the medical school frequently equalled or exceeded that of the collegiate section. In 1879 there were 39 students enrolled in the school of medicine, 33 in the college, and 38 in the preparatory section. In 1881 the medical enrollment had risen to 62 and by 1902 to 100 students. From 1902 to 1914 there was a gradual rise in medical enrollment to 195, but during the First World War there was a sharp drop to a low of 65 students in 1918. Following the war the enrollment again increased to over 100 students, and since the completion of new medical buildings in 1930 the enrollment has averaged between 150 and 175, except for a temporary drop during World War II. In 1926 President Bayard Dodge's efforts to bring professional education to women of the Middle East were successful when the first female student entered medicine. In recent years an average of 6–8 per cent of medical students have been women.

The majority of medical students have come from the surrounding Arab countries and from North Africa, with Lebanon, Syria, Iraq, Jordan, and Palestine providing the greatest numbers.

When the Syrian Protestant College changed its name to the American University of Beirut in 1920 the maximum enrollment for the entering class in medicine was 40 students. At times after expansion of the

medical facilities in 1930 the number of qualified applicants from the collegiate section did not fill the entering class, and applicants from abroad were accepted. Among these were a considerable number of well qualified Jewish students who could not gain entrance to Class A medical schools in the United States. At the time of the partition of Palestine in May, 1948, there were thirteen Jewish medical students with American, European, or Palestinian passports whose visas were withdrawn by the Lebanese Government, and they were obliged to leave the country. Middle Eastern Jews from Arab countries enrolled in the medical school and on the resident staff of the hospital continued their work, and at present the same group are represented on the staff of the university and enrolled as students. It is a mark of pride that political and religious tolerance are actively practiced within the university.

Medical graduates of the institution have played an important role in the betterment of medical care and health throughout the countries from which they came as well as in many adjoining states where graduates have gone to work. Among the alumni are prominent educators in several medical schools in the Middle East, ministers of health in governments, leaders of medical associations, and pioneers in opening new hospitals and sanatoria.

Although about 70 per cent of active alumni of the medical school are working in their home countries or other countries in the Middle East, a considerable number have immigrated to the West and to America in particular. This is partly due to a general trend among the population of Lebanon and Syria to immigrate to North and South America during the past half century, but it has been aggravated by two significant factors: A large proportion of the immigrants are Palestinian refugees who, after losing their properties in Palestine during 1947–48 and finding it difficult to gain security elsewhere in the Middle East, have sought new horizons in the West. A second minority group which constitutes a sizeable segment of the immigrants are Armenians, many of whom vividly recall the massacres of close relatives by the Turks at the close of World War I, and some of these graduates also were evicted from Palestine in 1947 and 1948. Their insecurity is understandable in the light of the political unrest which has existed throughout the Middle East in recent years. Most of the medical alumni who have gone to the United States are successful practitioners, and a considerable number have become outstanding in academic circles.

In recent years about one third of the medical graduates have gone on to residency training at the university hospital on affiliated institutions in Lebanon, one third into military service or practice in the Middle East, and the remaining third have gone to the United States for residency training.

The faculty of the medical school has been constantly expanding by the addition of qualified graduates who have been trained both at the university hospital and in recognized centers abroad. About 80 per cent of the faculty are Lebanese, and many hold responsible positions. Four out of seven chairmen of pre-clinical departments are local graduates, and three alumni are chairmen of clinical departments.

The flow of immigration to the West has not been entirely one way, since five members of the medical faculty who undertook postgraduate training in the United States returned with American wives, and several of the American nurses who came to work at the university hospital have married doctors or other members of the Lebanese community.

PHYSICAL PLANT

During the first four years of the medical school's existence the founding group conducted their medical teaching and practice in rented quarters. In 1871 the university obtained a large piece of land fronting on the Mediterranean in the suburbs of Beirut which then had little monetary value but today is the site of a beautiful campus surrounded by the expanded city of Beirut.

Early construction on the campus included a medical building, now used by social science departments, and a science building now used by the pre-medical section for biology as well as for the university museum and offices. The latter building is still known as Post Hall in honor of Dr. George E. Post who designed it.

After World War I there was a great need for modernization and expansion of medical facilities. New space for the departments of pathology, bacteriology, parasitology, and clinical pathology was provided by the addition of a large laboratory building on the hospital compound in 1924. Following surveys by representatives of the Rockefeller Foundation between 1921 and 1924 a large-scale building program supported by the Foundation got under way. By 1930 a chemistry building was completed, as well as an out-patient unit for the university hospital and a large basic science building named Van Dyck Hall after another of the founding physicians, Dr. Cornelius V. A. Van Dyck.

The basic science building was soundly designed to permit alterations and expansion as the trend of time demanded. It was expanded in 1950 with funds donated by the Rockefeller Brothers.

HOSPITAL FACILITIES

When the first class of six medical students was graduated in 1871, the clinical facilities of a few beds in rented quarters were obviously inadequate for the needs of a growing medical school. Fortunately, developments occurred at this time whereby an agreement was made in 1872 between the university and the Prussian hospital in Beirut. This hospital was opened in 1867 by the Knights of Saint John (the Johaniter Order) with a capacity for 82 patients. There was friction between the hospital administration and the chief physician, and the latter was dismissed. The university, by offering the services of an already respected medical faculty, was able to obtain facilities in the hospital and its out-patient department for the instruction of medical students. This arrangement continued until the close of World War I in 1918 when the hospital was taken over by the French authorities.

Although the Prussian hospital provided adequate clinical facilities for three decades, it became apparent to the progressive medical faculty members in the early 1900's that more hospital space was needed, particularly to accommodate patients in various medical specialties. At first authorities of the Prussian hospital objected to the university building facilities of its own, even though they were not prepared to expand their hospital to meet growing demands. However, after a trip to Berlin by the venerable scholar and diplomat, Dr. George E. Post, an agreement was reached whereby affiliation with the Prussian hospital would continue and the medical school was free to develop its own hospital for specialty services, particularly diseases of women, diseases of children, diseases of the eye and ear, and skin diseases.

New land was obtained adjacent to the university campus, a large private house located on it was converted to a hospital, and a nursing school was started in 1905. By 1908 three pavilions were completed which in modified form are still in use today. One was a children's pavilion which was designed by Dr. Harry G. Dorman, a second an eye and ear pavilion designed by Dr. Charles A. Webster, and the third was a women's pavilion designed by Dr. Franklin T. Moore. Funds for the hospital expansion of this period were raised by the board of trustees, with Marcelus Hartley Dodge and Morris K. Jessup as outstanding donors.

When the Prussian hospital facilities were lost after World War I, further expansion and modification of the university hospital became imperative. During the next decade the present laboratory building was constructed, as well as a new nurses' home; and several ancillary facilities including a kitchen and laundry. Among the principal donors during this period of expansion were Mr. and Mrs. Arthur Curtis James. The James Foundation established after the death of Mr. James has continued to contribute gen-

erously to the university and medical school during the past 15 years. The out-patient building with dormitory space for medical students and residents completed in 1930 with funds from the Rockefeller Foundation was another marked improvement to the hospital.

After the end of World War II gifts from the Cleveland Dodge Foundation and other donors made possible the construction of a new hospital wing linking two existing pavilions. Before opening the new wing in 1953 the old pavilions were remodeled and services redistributed so a more efficient teaching hospital of 209 beds was achieved. A small annex to the pediatric service, built in 1955, brought the capacity of the hospital to 220 beds. A large amount of new hospital equipment has been added since 1953, much of it provided by the United States Point IV program in conjunction with preventive medicine and public health activities.

Although the hospital now has better and more complete facilities for teaching and serving the community than ever before, it is still considered in a transitional state. A 10-year development plan for the university adopted by the trustees in 1956 envisages replacement of the remaining old buildings by up-to-date well equipped units which will increase the bed capacity to 350 or 400 patients.

As a teaching hospital, somewhat over half of the beds are devoted to the care of indigent and part-pay patients, and, like modern hospitals elsewhere in the world, a considerable financial subsidy is required to maintain its operation. In May, 1956, the university hospital was surveyed by Dr. Kenneth Babcock of the Joint Commission on Accreditation of Hospitals in the United States, and as a result full accreditation was granted.

AFFILIATED SPECIALTY HOSPITALS

The medical school was fortunate in the early 1900's in acquiring affiliation with two specialty hospitals which continue today as valuable adjuncts to the clinical teaching in psychiatry and in tuberculosis and chest diseases.

The Society of Friends in 1900 founded a mental disease hospital in Beirut at Asfuriyeh, about 20 minutes by car from the university. This institution flourished, chiefly under the guidance of British physicians and members of the community, and at present can accommodate 450 patients. Known as the Lebanon Hospital for Mental and Nervous Disorders, its physicians are now entirely of Middle East origin, and most of them, including the director, Dr. Antranig Manougian, are graduates of the American University of Beirut.

Teaching of tuberculosis and chest diseases is augmented by affiliation with the Hamlin Memorial Sanatorium located in the mountains of Lebanon about 20 miles from the university. This unit was founded in 1903 by an American missionary, Dr. Mary P. Eddy, the first woman physician in the Middle East. It has grown under the guidance of two medical alumni, Dr. Nimeh Nucho and his son Charles, who succeeded him as director in 1955. The institution currently has a capacity of 240 beds. In recent years, like sanatoria elsewhere, it has shifted its emphasis from only tuberculosis patients to the care of all forms of chest diseases.

ACADEMIC GROWTH SINCE WORLD WAR II

Because of the two World Wars most of the hospital teaching in 1943 was under the supervision of clinical or part-time professors. By 1946 Dean James O. Pinkston had brought full-time staff members into the departments of medicine, obstetrics and gynecology, and surgery. Similar appointments in ophthalmology and otolaryngology as well as pediatrics followed by 1950. With the enlargement of a full-time clinical staff, residency training programs were improved and expanded in line with requirements of American specialty boards, and a revival of research activities has followed. Recent new appointments in some basic science departments have also brought increased research programs, but under-staffing in several de-

partments continues to be a significant problem.

After World War II the need for better training in public health and preventive medicine was more apparent. With the support of the Commonwealth Fund, Dr. Henry E. Meleney made a survey of the school and the area in 1949, and many of his recommendations have been realized.

During recent years the full-time teaching staff in the medical school has gradually been increased to 43 members. Twenty-nine are from the Middle East, ten from America, and four from other parts of the world. The part-time and clinical staff of the medical school currently numbers 25 members, all of whom are Middle Eastern graduates and most of whom have had postgraduate training in America.

Post-war expansion of the school has been particularly difficult from a financial standpoint, because the inflationary change in the value of the dollar in Lebanon since 1939 has been in the neighborhood of 800 per cent, whereas in the United States it has been approximately 100 per cent.

The Middle East today is perhaps the most sensitive part of the world, and the American University of Beirut is in an excellent position to play a major role in history. In addition to the problems common to all medical schools, this one faces grave international problems and responsibilities. A vigorous faculty is seizing the opportunity to serve this part of the world by stimulating research and graduating physicians of high caliber.

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1. A Brief Chronicle of the Syrian Mission, 1819–1909, edited by Thomas Laurie and H. H. Jessup, and published by the American Mission Press, Beirut, in 1909.
2. Reminiscences of Daniel Bliss (first president of the university), edited by his son, Frederick J. Bliss, and published in 1920 by Fleming H. Revell Co., New York.
3. That They May Have Life, The Story of the American University of Beirut, by Stephan B. L. Penrose, Jr., printed by Princeton University Press in 1941. (Dr. Penrose became the fourth president of the university in 1948 and served until his untimely death in 1954).
4. The American University of Beirut, A Brief History of the University and the Lands which It Serves, by Bayard Dodge. Published in 1958 by Khayat's, Rue Bliss, Beirut.
5. Annual Reports of the University, prepared by the president and released by the trustees of the university through the office of the Near East College Association, 40 Worth Street, New York 13, N.Y.
6. Many colleagues and friends in the Beirut community whose first-hand knowledge of the institution, extending back a half century or more, has been willingly offered.

Benjamin Waterhouse, Harvard's First Professor of Physic

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Hailed abroad as the Jenner of America, but contemned at home for self-seeking and dishonesty; appointed at the age of 28 as Harvard's first Professor of Physic but fired some 30 years later; lauded by historians who considered him the victim of unjust political, professional, religious, and personal persecution, but ignored or scorned by others; Benjamin Waterhouse emerges as one of the most controversial figures in the early medical annals of America. But like most men he was, in fact, neither the thorough blackguard some of his colleagues thought him nor a martyred saint.

Born in Newport, Rhode Island, on March 5, 1754, Benjamin was the son of Timothy and Hannah (Proud) Waterhouse, the latter a Quaker born in England and first cousin of the noted London physician, Dr. John Fothergill. After a typical classical education and several years' apprenticeship under Dr. John Halliburton, Waterhouse sailed from Newport in March, 1775, just before the Revolution, "consigned by my family," as he later wrote, "to Doctor Fothergill, in London, for farther improvement."

Cordially received by his mother's cousin, Waterhouse at his advice went to Edinburgh in the fall to study under such noted teachers as William Cullen, Joseph Black, and Alexander Munro. Returning to London 9 months later, he "walked the wards" of London hospitals, like other students of physic, and attended lectures by John Hunter, George Fordyce, and other medical greats. To very few, however, were given his opportunities, for he lived as a member of the family with Fothergill, whose home was "the resort of the most distinguished philosophers of the age." Inspired by his teacher and friend with "a taste for the works of nature," Waterhouse also attended

Photo by Henry A. Cutler
Courtesy of Redwood Library and Athenaeum, Newport, Rhode Island.

BENJAMIN WATERHOUSE AS A STUDENT
PAINTED BY GILBERT STUART

lectures on experimental philosophy, botany, and mineralogy.

Although the Westminster Monthly Meeting certified in October, 1778, that the young man was "of a Sober life and conversation,"[1]

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[1] Ms. in Waterhouse Papers, Harvard Medical School Library.

not all his time was spent in study. With a friend of Newport days, the artist Gilbert Stuart, he explored the byways of London until warned of the hazards of footpads in the big city. Thinking perhaps of these escapades, Fothergill sent Waterhouse on to Leyden in the fall of 1778, "to acquire, as he smilingly said, a little of the Dutch phlegm."[2]

In Leyden, Waterhouse matriculated at the University as "Liberæ Reipublicæ Americanæ Fœderatæ Civis." This aroused some concern among the authorities, because Holland had not yet recognized the United States. Meanwhile our prospective minister, John Adams, was also staying at Leyden, and Waterhouse lived with him and his sons.[3] As Adams later wrote:

> . . . finding him, though a sprightly genius, very studious and inquisitive, as well as sociable, I had no inquiries to make, but whether his moral character was good, and whether he was a loyal American. As to his morals, I could hear of no reproach or suspicion; as to his politics, though he came over from England, he came from the guardianship and pupilage of Dr. Fothergill, who was as good a friend to America, as any Englishman could be . . . and his conversation was in the style of a good American. I did not, therefore, hesitate to consider him, in some respects, as one of my family.[4]

In April, 1780, Waterhouse presented his thesis, *De Sympathia Partium Corporis Humani*, and took his M.D. degree. After another year of travel and additional courses in history and the laws of nations, he sailed from Spain late in the summer of 1781 on a leisurely journey via the Canaries and West Indies, returning to Newport the following June. He was, writes Dr. Henry Viets, "perhaps the best educated physician in America at that time." How he would use his training and talent remained to be seen.[5]

Waterhouse at first started to practice in Newport, but soon he was called to a higher post. In September, 1782, the Harvard Corporation established a medical school, primarily at the instigation of John Warren, who was chosen on November 22, at the age of 29, as Professor of Anatomy and Surgery. A month later, on December 24, 1782, Waterhouse was picked to be Professor of the Theory and Practice of Physic, and in May, 1783, the election of Aaron Dexter as Professor of Chemistry and Materia Medica completed the original faculty. The professors were inducted into office in October, although the first lectures did not begin until November 24, 1784.[6]

Many practitioners, however, seem to have considered the new Institution more of a threat than an asset, and they resented especially the strategic position it gave to John Warren. Jealous of its prerogatives, the Massachusetts Medical Society foresaw Harvard impinging on its right to grant licenses to practice. This conflict was soon resolved, and harmonious relations were restored; John Warren, in fact, was vice-president of the Society from 1800 to 1804 and then president until his death in 1815. More serious was the lack of clinical facilities. With no hospital available in Cambridge, the Corporation in 1784 urged Boston's overseers of the poor to appoint the medical professors physicians to the almshouse, but the Boston Medical Society blocked this effort by insisting that the

[2] Benjamin Waterhouse, *An Essay on Junius and His Letters* (Boston, 1831), v–vi, xiii–xiv; Waterhouse, *The Botanist* (Boston, 1811), xiv; "Sketch of the Life of Benjamin Waterhouse, M.D.," *Polyanthos*, 2:76, 1806; William Dunlap, *A History of the Rise and Progress of the Arts of Design in the United States* (F. W. Bayley and C. E. Goodspeed, eds., Boston, 1918), 1:204–11; Josiah C. Trent, "The London Years of Benjamin Waterhouse," *J. Hist. Med.*, 1:25–40, 1946.

[3] Waterhouse, *Junius*, vi–vii.

[4] W. C. Ford, ed., *Statesman and Friend: Correspondence of John Adams with Benjamin Waterhouse 1784–1822* (Boston, 1927), 45n.

[5] *Polyanthos*, 2:77–79; Henry R. Viets, "'A Journal, of a Young Man of Massachusetts, . . . Written by Himself.' Boston: 1816, and a Note on the Author," *Yale J. Biol. Med.*, 12:613, 1939–40.

[6] Edward Warren, *The Life of John Warren, M.D.* (Boston, 1874), pp. 245–258, 284; Thomas F. Harrington, *The Harvard Medical School, a History, Narrative and Documentary* (New York, 1905), 1:80–87, 99–100; Samuel Eliot Morison, *Three Centuries of Harvard 1636–1936* (Cambridge, 1936), pp. 167–170; T. E. Moore, Jr., "The Early Years of the Harvard Medical School: Its Founding and Curriculum, 1782–1810," *Bull. Hist. Med.*, 27:543–44, 1953. The date of the first lectures, hitherto uncertain, is established by an advertisement in the *Massachusetts Centinel*, Nov. 20, 1784.

"public medical business" be distributed equally.[7]

Waterhouse, too, was the object of professional jealousies. At the time of his appointment, he was, as John Warren's son later wrote, "a townsman and friend of my mother, was considered a young man of talents and attainments, and had received . . . a foreign education." His appointment nevertheless aroused resentment, in part at least among those who thought the post should have gone to a local son of Harvard.[8] Jealous rumor easily invented reasons for the choice other than the young man's merit. Waterhouse, wrote Ephraim Eliot,

> . . . was a relation and pupil of the excellent Dr. Fothergill of London, who, it was said, had contemplated such an establishment at this university; and, although he had died, it was also reported that Dr. [John C.] Lettsom had succeeded to much of his business, and meant to fulfill his benevolent intentions. This was only a gossiping story, but was believed, or rather hoped for, by many persons. Dr. Waterhouse was therefore determined upon for the other professorship.[9]

Waterhouse, on the other hand, found that not all at Harvard was to his liking. The financial rewards, which for nearly 10 years depended solely on the students' fees, were small. The University failed to provide proper classroom accommodations until 1801, when, after a forceful complaint from Waterhouse, Holden Chapel was at last fitted up for the medical professors' use.[10] Moreover, his European experience as Fothergill's protégé had left Waterhouse ill prepared for the exigencies of a doctor's life in a small New England town. Feeling superior to other local physicians, Waterhouse assumed a pompous and pedantic air. Yet his practice was small. As Oliver Wendell Holmes remarked, "the good people of Cambridge listened to his learned talk when they were well, and sent for one of the other two doctors when they were sick."[11] Waterhouse himself admitted in 1794:

> The fact is, I have no taste for the practice of physic as it is conducted in this country. It is not worth a man's attention. I feel such a mighty difference between transcribing from the great volume of Nature, and practising among the very vulgar, that is, conforming to the whims and nonsense of old women and silly people, that I am sometimes almost determined to renounce it for ever. I know how a London physician gets his bread, but with us it is widely different: a man like me of a weakly frame, addicted to study, is liable to be called out five or six miles on horseback in a severe winter night, and to remain out all night, and to receive (in the course of the year) a guinea for it! We are obliged to be physician, surgeon, apothecary, and tooth-drawer, all under one; and if we are not attentive to small things, and if we do not give consequence to trifles, we are dropped for some one who does. You are spoiled (say some of my friends) for practice in this country, by living so long with Dr. Fothergill, which is in a great measure true.[12]

Although never one to lose sight of his interests, John Warren, in contrast to the Professor of Physic, was much less disturbed by conditions in Cambridge. Not having been "spoiled" by European patronage, he had a firmer grasp on the realities of life in America and one of the most successful practices in Boston. Moreover, he also received greater recognition for his professional attainments. To see Warren thus preferred must have sorely rankled the Rhode Islander's heart. One thing is certain: the two men came to detest each other.

One reason perhaps why Waterhouse did not have a larger practice was that he spent so much time on natural history, despite Fothergill's advice to regard it "only as an

[7] E. Warren, *op. cit.*, pp. 285–295; Harrington, *op. cit.*, 1:100–113, 274–78.

[8] E. Warren, *op. cit.*, p. 255; John Adams to Waterhouse, Sept. 8, 1784, in Ford, *op. cit.*, p. 3; *Polyanthos*, 2:79–80.

[9] Quoted in Harrington, *op. cit.*, 1:79.

[10] I. Bernard Cohen, *Some Early Tools of American Science* (Cambridge, 1950), pp. 73–74; Josiah Quincy, *The History of Harvard University* (Boston, 1860), 2: 266–69.

[11] O. W. Holmes, "Medicine in Boston: Additional Memoranda," in Justin Winsor, ed., *The Memorial History of Boston* (Boston, 1880–81), 4:564.

[12] Quoted in Thomas J. Pettigrew, *Memoirs of the Life and Writings of the Late John Coakley Lettsom* (London, 1817), 2:464–65.

agreeable adjunct to the healing art."[13] In 1784 the College of Rhode Island (now Brown University) had elected him Professor of Natural History. His first set of lectures in Providence in 1786 was received, according to one newspaper, "with the greatest pleasure and satisfaction by large assemblies of the most respectable characters, both ladies and gentlemen." He repeated the series in 1787, and then in 1788 the Harvard Corporation authorized him to deliver a similar course in Cambridge, to students who had their parents' permission.[14]

Although the prescribed Harvard curriculum had included some biology since the seventeenth century, the College had heretofore done virtually nothing to advance teaching or study of natural history. Waterhouse, therefore, as he wrote in 1805, "had first to excite a curiosity and then to gratify it." Though the students at first were few, Waterhouse persevered, "animated with the ambitious sentiment of being considered hereafter the *Founder* of Natl. History in the first University in America." By 1795 he had nineteen pupils, and in 1796 the number doubled again.[15]

One reason, no doubt, for the increasing popularity of the course was the publicity Waterhouse gave it by repeatedly publishing a syllabus in newspapers, broadsides, pamphlets, and magazines, beginning as early as 1786.[16] Another and perhaps more significant reason was the development of the College collections. Prior to 1790 Harvard's "museum" had consisted of a miscellaneous assortment of curiosities such as two Egyptian mummies and an inkstand "wrought of the Lava of Vesuvius." But a personal gift of about 50 fossils from Lettsom inspired Waterhouse to build a "cabinet" of minerals. In answer to a request from Cambridge, Lettsom sent Harvard a series of rich donations between 1793 and 1796 which were supplemented by gifts from James Bowdoin and the Republic of France. Totaling about a thousand, the collection was "by far the richest and most extensive" in the country at the time. Under Waterhouse's care the specimens were numbered, described, and catalogued "in a very ingenious and elegant manner," and arranged in a mahogany cabinet 18 feet long and 10–12 high, "for the inspection of the curious." Until he began collecting, Waterhouse knew less of mineralogy than any other branch of natural history. But he immersed himself in the available books and, "Plunging into fire and phlogiston," began lecturing to an increasing circle of students.[17]

Arousing interest in natural history and developing the mineralogical cabinet was one of Waterhouse's most significant contributions as a member of the Harvard community. The other, for which he is best known, was his role in the introduction of vaccination, a story that needs only brief retelling here.[18] Early in 1799 Waterhouse received from Lettsom a copy of Edward Jenner's historic *Inquiry into the Causes and Effects of the Variolæ Vaccinæ* (London, 1798) describing for the first time the practice of vaccination, or inoculation with cowpox. As Waterhouse saw, this offered several advantages over the existing practice of variolation, or inoculation with smallpox, which had become since its introduction in 1721 a commonplace medical procedure.[19] According to early reports (which have proved essentially true), vaccination, in contradistinction to variolation, was never fatal to the patient, and it eliminated the possibility, inherent in variolation, of spreading a virulent disease by natural infection.

[13] Waterhouse, *Botanist*, xiv.

[14] J. Walter Wilson, "The First Natural History Lectures at Brown University, 1786, by Dr. Benjamin Waterhouse," *Ann. Med. Hist.*, Ser. 3, 4:390–98, 1942; *Massachusetts Centinel*, Sept. 20, 1786; Cohen, *op. cit.*, p. 100.

[15] *Ibid.*, pp. 96–100; William C. Lane, "Dr. Benjamin Waterhouse and Harvard University," Cambridge Historical Society, *Publications*, 4:11–12, 1909.

[16] *Massachusetts Centinel*, Sept. 20, 1786; Cohen, *op. cit.*, pp. xix, 101–102, plates 10, 11.

[17] *Ibid.*, pp. 97–99, 115–122; Pettigrew, *op. cit.*, 1: 192–93; 2:465–71.

[18] John B. Blake, *Benjamin Waterhouse and the Introduction of Vaccination: a Reappraisal* (Philadelphia, 1957), and works cited there, especially in note 16.

[19] The literature on the history of variolation is extensive. See especially Genevieve Miller, *Adoption of Inoculation for Smallpox in England and France* (Philadephia, 1957).

Soon after receiving Jenner's volume, Waterhouse published an abstract in a Boston newspaper. Then, after several fruitless attempts, he obtained vaccine from England and in July, 1800, first used it on his own family. After testing them by variolation, Waterhouse began vaccinating others. Subsequently he published numerous newspaper articles and a book in two parts publicizing the practice, and himself in the process. During the late summer and fall of 1800 he distributed vaccine to selected physicians in New England, and beginning in 1801 he sent it to numerous other more distant localities. For some 5 years he devoted much of his time to promoting the new preventive.

Unfortunately, however, Waterhouse assumed an attitude of insufferable superiority and arrogantly denigrated the contemporaneous efforts of other Boston physicians to advance the practice. Even more important, during the fall of 1800, until others imported the virus from England, he refused to let a single nearby physician have any vaccine, and he sent it to those at a distance only on their written promise to pay him a quarter of their profits and to keep the supply from anyone else. Whatever Waterhouse may later have claimed, the evidence of contemporary documents affords incontrovertible proof that all the while he professed philantrophic motives, he actually sought excessive personal pecuniary profit from monopolistic control of the vaccine. These efforts, which became well known to other physicians in and about Boston, would certainly be considered unethical now, and they were so then. Together with his egotism and the self-adulation of many of his newspaper publications, they explain in large measure the personal hostility that Waterhouse encountered, and they continued to plague him for the rest of his professional career.

From this time on Waterhouse, who had heretofore managed to surmount his opposition, found himself in increasing difficulties. Partly, at least, because of the interest aroused by his lectures, a group of wealthy Bostonians raised a subscription of over 30,000 dollars in 1805 to establish a botanical garden and professorship of natural history at Harvard. Waterhouse—so he later claimed—"did every thing in his power to forward the design," including the publication of a series of popular essays on botany in the Boston *Monthly Anthology* beginning in 1804. The subscribers, however, reserved the right to name the first incumbent. Waterhouse had few friends among them, and at least one, John Adams, was never consulted about the choice. Accordingly, the post went to William Dandridge Peck.

Peck was probably as well if not better qualified for the job than Waterhouse, but the latter, who saw what he had built about to be taken from him, was understandably distressed. In a letter to a member of the Corporation, Judge John Davis, he threatened that, should this professorship interfere with his reputation and interest, he would publish a pamphlet narrating his efforts to promote natural history and then quit his post to lecture and practice in Boston. Peck left Cambridge immediately following his appointment for 3 years of study in Europe. By the time he returned and the possibility of conflict between his lectures and Waterhouse's arose, the latter's position was slipping even faster.[20]

For one thing, Waterhouse further alienated the medical profession in 1806 by a slanderous newspaper attack on the Massachusetts Medical Society and several of Boston's most respected practitioners.[21] Nor were his political views enhancing his popularity. Writing in 1815, he attributed the loss of his position at Harvard primarily to partisan animus:

> When Mr. Jefferson came into office, the late Judge Lowell, a leading man of the *Junto*, and a very influential governor of this University, and a warm friend of mine, gave us, of the college to understand, that the church and all our other sacred Institutions were in danger,

[20] Waterhouse, *Botanist*, vi–viii; Ford, *op. cit.*, pp. 27–28; Lane, *loc. cit.*, pp. 13–14; Quincy, *op. cit.*, 2: 291–92, 328–30, 342–43; Cohen, *op. cit.*, pp. 103–108.

[21] Blake, *op. cit.*, pp. 55–60.

particularly the University, that therefore it behoved us Professors to ralley with the clergy, and together form *the front-rank* in the Massachusetts *army of federalism*, in opposition to infidelity, Jacobinism and *Jeffersonism*. My associates, and the clergy very generally swallowed and relished this doctrine, while I remained rather silent. I however, at length, said thus much to my esteemed friend Lowell: "as I know not exactly what you mean by *federalism*, I should rather, that we unite and endeavour to form the front rank of knowledge, and virtue, and piety, and leave to the politician the government of the State." "True," said these Junto-men, "but WE *must form these politicians*." It is from this Seminary go all the Lawyers, Divines and Physicians, and *gentlemen*, and here they must imbibe *true* principles, (which were little more than hatred to France, adoration of England, and contempt of their own country). From this time, the exercises and orations of the students were replete with *Essex Junto* doctrines; and soon after the pulpits uttered similar sentiments. I could not entirely conceal my disapprobation of this line of conduct.

When Federalist newspapers ridiculed an alleged mountain of salt described by Jefferson, Waterhouse continued, he upheld the President's science. This "stopped the current of low abuse" against him, "but brought the vengeance of the party on my head. I was stiled 'the flatterer of the Infidel Jefferson.' "[22]

At the time Waterhouse wrote this letter, he was seeking the rewards of past and future political services. Actually, at least until the *Chesapeake* affair in 1807, he was far from being a good Jeffersonian Republican. While Waterhouse did not look upon the election of Jefferson as a national calamity, as did high Federalists like the Warrens, he was, as he wrote Jefferson himself in 1805, "a moderate man, or a lukewarm federalist." He was therefore "excluded from the solemn feasts and *clamorations* of the outrageous party men," but he continued to vote the Federalist party ticket. As late as January, 1807, he could still write in a letter about the "Democrats" and "their vile party purposes."[23]

Even in 1809 the Boston Republicans by no means regarded Waterhouse as their man. When Jefferson named him physician to the Marine Hospital in Charlestown in November, 1807, as a reward for his efforts to promote vaccination, the *Columbian Centinel*, leading organ of New England Federalism, expressed gratification at the appointment; it was the disappointed local Republicans who complained.[24] Waterhouse took up his duties with vigor. He improved the hospital buildings and grounds, instituted several beneficial changes in the regulations, started an out-patient service, and gave clinical instruction to a number of students. He also appointed his wife directress to the hospital, with the result, so he claimed, that it was managed better than ever before and at less expense.

Unfortunately, not all his actions appeared in quite so favorable a light to the authorities in Washington. After Madison succeeded Jefferson as President in 1809, Waterhouse's enemies—including William Eustis of Boston, a physician, Republican, and more especially Madison's first Secretary of War—returned to the attack. By this time Waterhouse had apparently forsworn Federalism: at least he received a testimonial letter from Massachusetts' leading Republican, Elbridge Gerry, that he was a friend of the administration, as well as other letters from physicians supporting his professional ability. Nevertheless, he was forced to acknowledge some of the charges brought against him. In Madison's opinion, these rendered it "inconsistent with the general principles, proper to be maintained by the Government, to permit him to remain in his present station. . . ." Madison offered Waterhouse an opportunity to resign, but he refused to take it. Thereupon, in July, 1809, he was removed from office. "Without enter-

[22] Waterhouse to Dr. James Tilton, Mar. 24, 1815, in Massachusetts Historical Society, *Proceedings* (for 1920–21), 54:160–61, 1922.

[23] Waterhouse to Jefferson, Apr. 7, 1805, Jefferson Papers, Library of Congress; Waterhouse to Dr. Bartlett; Jan. 30, 1807, MS. in Massachusetts Historical Society; Blake, *op. cit.*, p. 66.

[24] *Columbian Centinel*, Dec. 12, 1807; Feb. 17, 1808.

ing into other details," explained the Secretary of the Treasury, forwarding the President's decision, "I will only state that his having supplied his own family with provisions which have been charged to the Hospital, and his having allowed compensation to his wife under another than her present name, rendered it impracticable to continue him in the public service."[25]

How far this dismissal was due to factional political opposition within the Republican party (it is hard to imagine that Federalist politicians' views could have had much weight with Madison), how far to professional jealousies and animosities stemming from Waterhouse's personality and his efforts at monopoly, and how far to his misdeeds at this post, is impossible at this point to say with assurance. It is certain, however, that it did not raise his standing with the Harvard Corporation. Already distressed by the appointment of Peck as Professor of Natural History in 1805, Waterhouse saw to his dismay the election of Professor Samuel Webber, with whom he had already had at least one run-in,[26] as president of the university in 1806. In 1807 the Corporation appointed Webber and Judge John Davis a committee to investigate the state of the mineralogical cabinet. They professed themselves unable to find many items but received only an indignant reply from the keeper. In April, 1809, after Peck returned from abroad, the Corporation withdrew Waterhouse's authority to present his lectures on natural history. In October, alerted by reports that Waterhouse had been ousted from his Marine Hospital post "on charges said to affect his moral character," the Corporation discharged him from further care of the mineralogical cabinet and turned the keys over to the librarian. Thereupon, as he had earlier threatened, Waterhouse inaugurated a series of public lectures on natural history in Boston in December, 1810, and the following July he reissued in book form his previously published essays on botany. Public self-justification was undoubtedly his primary purpose.[27]

In *The Botanist* Waterhouse pointed out that natural history comprehended not mere description and classification, but the processes of living organisms. "There appears to be as much difference," he explained, "between the nomenclator of a museum of natural bodies, and a natural historian, . . . as there is between the mere anatomist, or dissector of the human body, and its physiologist."[28] This obvious allusion to John Warren, the professor of anatomy, was both pointed and timely, for their feud was rapidly coming to a head.

The immediate origins of the final break arose from the removal of the medical school from Cambridge to Boston. Since its establishment, the necessity of traveling to Cambridge to give lectures had been a burden to Warren and Dexter, both of whom lived and practiced in Boston. With the appointment of John Warren's son, John Collins Warren, as adjunct Professor of Anatomy in 1808, and of John Gorham as adjunct Professor of Chemistry in 1809, the proportion of professors in Boston rose to four to one. There were, however, more important considerations than personal convenience. Cambridge was a small town completely lacking in the clinical facilities essential for a first-class medical school, even by the lax American standards of that day. As a result, Harvard's medical institution was still small and backward. From 1788, when the first M.B. was granted, through 1810, the university conferred only 51 medical degrees in course, and many of the most promising young men from Boston were going to Philadelphia for

[25] Waterhouse to Benjamin Lincoln, Collector of Customs at Boston, June 29, 1808, Records of the Bureau of Customs, Boston Collector, Letters from the Treasury, Collectors, etc., 1789–1818, 1: no. 20, National Archives, Record Group 36; Gallatin to Henry Dearborn, Collector of Customs at Boston, June 30, 1809, *ibid.*, no. 58; Gallatin to Dearborn, July 18, 1809, *ibid.*, no. 67; Waterhouse to Jefferson, June 21, 1809, Jefferson Papers, Library of Congress; Waterhouse to General Varnum, May 8, 1813, in *Military Surgeon*, 63:68–75, 1928; John W. Trask, *The United States Marine Hospital, Port of Boston* (n.p., 1940), pp. 25–26.

[26] Lane, *loc. cit.*, pp. 9–10.

[27] *Ibid.*, pp. 14–17; Harrington, *op. cit.*, 1:295–96; Pettigrew, *op. cit.*, 2:493; Cohen, *op. cit.*, pp. 105–6; Waterhouse, *Botanist*, v–viii.

[28] *Ibid.*, xiii.

their medical training.[29] Furthermore, it was becoming apparent that unless Harvard moved its school to Boston, others would set up a new institution there.

Influenced by these considerations, Warren and Dexter petitioned the Corporation —whether or not they told Waterhouse in advance is a matter of dispute—to transfer the school to Boston, and in July, 1810, the Corporation agreed. After securing permission to use the Boston almshouse for clinical teaching, the Corporation also appointed an intimate personal and professional friend of the Warrens, James Jackson, Professor of Clinical Medicine, and, despite Waterhouse's protests, the Overseers, after no little debate, concurred. Under considerable pressure Waterhouse reluctantly agreed to lecture in Boston, and the school opened there in December, 1810. The move was little to his liking, but it undoubtedly benefited the institution immeasurably.[30]

Waterhouse's belief that he was being unjustly persecuted soon led him into more active protest. In February, 1811, a group of physicians, including a preponderance of Republicans, petitioned the legislature to incorporate a Massachusetts College of Physicians with powers like those granted similar institutions in other states. Though the petition was somewhat vague, it was generally believed, probably correctly, that the petitioners' object was to set up not only a new medical society but also a new medical school, in rivalry with the existing institutions. Nevertheless, Waterhouse vigorously advocated their cause with his too often abusive pen. In the *New England Palladium* of April 23, 1811, appeared an article, almost surely by him, supporting the proposed College because it would "hold up Medicine to the public, and to posterity, not as a mere money getting trade, but a liberal profession worthy the respect and confidence of the public . . . ." In the next issue this censure of existing institutions was answered by a writer who recalled the profession's philanthropic activities and then concluded: "All these things will be still more justly estimated when contrasted with the deeds of *agents* for the new College, such as a *liberal dispensation of Cow Pock matter—for a small fee; generous inoculation* of seamen,—when paid for by a merchant; and the *disinterested offer to vaccinate a hundred* individuals in two rich parishes—at the expense of a benevolent unknown."[31]

This struck home. Waterhouse exploded with a thinly veiled lampoon of Warren, accusing him of opposing the College because he feared it would diminish his profits, and of attempting to appropriate for his own profit a legislative grant to the Massachusetts Medical Society. Lest anyone miss the point, Waterhouse, so the story goes, walked down State Street newspaper in hand, pointing out the article to all he met.[32]

Finally, in November, 1811, the Warrens, Aaron Dexter, and James Jackson presented a letter to the President of the University charging that Waterhouse had "been engaged in the support of plans inimical to the interest of the medical Institution," that he had "been guilty of duplicity & want of veracity," and that he had "repeatedly published in the newspapers without his proper signature, suggestions and insinuations injurious to our characters & highly offensive to our feelings, & such as are designed to diminish our usefulness in the University." They could no longer, they concluded, hold further communication with him. The members of the Corporation seem to have considered the quarrel very thoroughly, and they gave Waterhouse every opportunity to speak in his own defense. He showed no signs of contrition or even a desire for accommodation. Rather, as the battle over the proposed College approached its climax, Waterhouse became increasingly abusive. He labeled the medical school "an establishment, which, as it is at present administered,

[29] Harvard University, *Quinquennial Catalogue of the Officers and Graduates 1636–1930* (Cambridge, 1930), pp. 851–52; Leonard K. Eaton, "Medicine in Philadelphia and Boston, 1805–1830," *Pennsylvania Magazine of History and Biography*, 75:66–70, 1951.

[30] Harrington, *op. cit.*, 1:296–305, 357–63; Pettigrew, *op. cit.*, 2:492–93.

[31] *New England Palladium*, Apr. 26, 1811.

[32] *Ibid.*, May 3, 1811; Morison, *op. cit.*, 223.

is one of the most nefarious and powerful engines in erecting a detestable aristocracy, and destroying the vital principles of republicanism," and his accusations against the Warrens became more strident than ever.[33] Charge brought countercharge, and once the argument descended to personalities the younger Warren could outpoint Waterhouse every time. It was hardly an overstatement to decide, as the Corporation did in May, 1812, that harmony and confidence among the medical professors had been destroyed. Finding the charges preferred against Waterhouse true, the Corporation voted that he "be & he hereby is removed" from the Hersey Professorship of the Theory and Practice of Physic.[34]

Setting himself up as the victim of Federalist persecution, Waterhouse now plunged more deeply into political affairs. Beginning in October, 1812, he published a series of some 45 political articles in the *Boston Patriot* over the signature "Independent Whig." Besides giving vent to his feelings, this work also offered more tangible rewards. Waterhouse's income from private practice was never large, and the Republicans valued his ready pen. Soon he was pulling wires to get a new job. At Waterhouse's behest, John Adams, who had also forsworn allegiance to Federalism, late in 1812 wrote Benjamin Rush, the famous Philadelphia physician, asking, "Can nothing be done to save an amiable Family and a Man of first rate Merit from oppression, from becoming a sacrifice to Tory Vengeance, and professional envy?" "I feel for Dr. Waterhouse," Rush replied. ". . . Can nothing be done for him at Washington? He would make an excellent purveyor to a military hospital." Rush also offered to "second and support a recommendation from his friends in and near Boston for a situation in the marine and military hospitals which shall not separate him from his family. The cause of his dismission from office by Mr. Madison must be noticed in his recommendation," he added, "and its falsehood exposed if possible."[35]

Though Waterhouse at first sought only reinstatement at the Marine Hospital, he soon began to look higher. When Rush died on April 19, 1813, Waterhouse hoped to get his position as Treasurer of the United States Mint, but the appointment of James Rush, Benjamin's son, forestalled this possibility. He then put in his bid for a berth as Physician General to the United States Armies, enclosing an endorsement of his "abilities, learning, professional knowledge & integrity . . . and also of his steady attachment to the cause of his country," signed by leading local Republicans.[36] The administration was not willing to go that high, but finally, at the end of June, 1813, awarded Waterhouse a commission as Hospital Surgeon. "Although it falls short," he replied to the Secretary of War, "of the place my friends had flattered me with, I hesitate not to announce to you my acceptance of it."[37]

This being wartime, the number of openings in the military service was relatively large. After the Treaty of Ghent was signed, however, a reduction in force appeared in-

[33] *An Answer to a Letter Addressed to a Republican Member of the House of Representatives of the State of Massachusetts, on the Subject of a Petition for a New Incorporation, to Be Entitled the College of Physicians* (Boston, 1812). The quotation is on pp. 3–4. If not the author, Waterhouse at least aided in the distribution of this pamphlet; see copy in John Jeffries Papers, Houghton Library, Harvard University.

[34] Harrington, *op. cit.*, 1:379–90; Lane, *loc. cit.*, pp. 17–21; Edward Warren, *The Life of John Collins Warren, M.D.* (Boston, 1860), 1:102–7. For J. C. Warren's rejoinders, see *A Letter Addressed to a Republican Member of the House of Representatives of the State of Massachusetts on the Subject of a Petition for a New Incorporation, to Be Entitled "A College of Physicians"* (Boston, 1812, copy in National Library of Medicine); *Reply to a Pamphlet Purporting to Be an Answer to a Letter Addressed to a Republican Member of the House of Representatives on the Subject of a Petition for a New Incorporation, to Be Entitled a College of Physicians* (Boston, 1812, copy in Jeffries Papers, Harvard).

[35] Adams to Rush, Dec. 21, 1812, in *Old Family Letters: Copied from the Originals for Alexander Biddle. Series A* (Philadelphia, 1892), pp. 325–326; Rush to Adams, Jan. 8 and Jan. 22, 1813, in L. H. Butterfield, ed., *Letters of Benjamin Rush* (Princeton, 1951), 2:1175, 1177.

[36] Rush to Adams, Feb. 15, 1813, *ibid.*, 2:1183–84; Rush to Waterhouse, Feb. 15, 1813, in Waterhouse Papers, Harvard Medical School Library; Adams to Waterhouse, May 9, 1813, in Ford, *op. cit.*, pp. 99–100; Waterhouse to General Varnum, May 8, 1813, *Military Surgeon*, 63:68–75, 1928.

[37] Letter dated July 6, 1813, Letters Received, Records of the Adjutant General's Office, U. S. Army, National Archives, Record Group 94 (hereafter cited AGO Records, NA).

evitable. Anxious to be retained, Waterhouse at this juncture sent Dr. James Tilton, the army's Surgeon General, his views on the necessity of maintaining at least part of the medical department built up during the conflict. Young men, he noted, could easily return to practice, but as for himself, "I cannot live out of the public employ. I am completely thrown upon them, like a pauper on the parish, & if they do not retain me, I & mine must perish, for I might beg in vain in the federal town of Boston. . . ."[38] A month later Waterhouse sent Tilton another long letter outlining his career, his contributions as a writer, and his sacrifices to the cause of Republicanism. He asked for a job as medical superintendent of the New England military districts with headquarters at Charlestown. "My wish is to be retained in the service in my old residence," he wrote, "and to be so situated and circumstanced as to be able to serve my country as a medical man, and *with my pen as a literary one.*"[39] Powerful friends came to his support. On June 17, 1815, Messrs. Thomas Rowe and Joshua Hooper, Jr., publishers of the Boston *Yankee*, wrote to the Adjutant and Inspector General of the Army urging the retention of Waterhouse at his current location. "Since that formidable champion, 'OLD SOUTH,' retired a conqueror from the political lists," they avowed, "no writer has wielded the pen more forcibly or indefatigably than this gentleman—to whose talents *all* the republican papers in this vicinity are highly and continually indebted."[40] For services rendered, Waterhouse was kept on: "When the army was reduced to the peace establishment, the Board of officers, acting according to certain military principles, left me out; but President Madison took his pen and put me in again." By special direction of the Secretary of War, Waterhouse was permitted to reside at his home in Cambridge. The appointment was purely political. Forced to importune again in 1821 at the age of 67 when the army was further reduced, Waterhouse admitted, in a letter endorsed "Confidential," "I expected the board would have acted as they did; for I never was in the actual service of the Army."[41] This time, however, President Monroe let him go.[42]

Since leaving Harvard, so he wrote Adams, Waterhouse had scarcely looked into a medical book.[43] As the years passed by, he devoted himself primarily to literary pursuits. In addition to newspaper articles and a diary filled with acid comments on men and events, he edited *A Journal of a Young Man of Massachusetts* (Boston, 1816), which was originally written by a ship's surgeon captured by the British during the War of 1812. Much more extensive was Waterhouse's 449-page work, *An Essay on Junius and His Letters* (Boston, 1831), a volume of political history and reflections seeking to prove that the author of the famous letters of Junius was the great William Pitt. His final endeavor was again an editorial one: from notes and other information supplied by John B. Wyeth he drew up *Oregon; or a Short History of a Long Journey from the Atlantic Ocean to the Region of the Pacific, by Land* (Cambridge, 1833), a stirring story of western travel despite Waterhouse's moralizing additions. It was, except for possible newspaper items, Waterhouse's last publica-

[38] Letter dated Feb. 25, 1815, Letters Received, AGO Records, NA.

[39] Letter dated Mar. 24, 1815, Massachusetts Historical Society, *Proceedings* (for 1920–21), 54:159–65, 1922.

[40] File no. 9705, Letters Received, AGO Records, NA.

[41] Waterhouse to Adams, June 4, 1821, in Ford, *op. cit.*, pp. 158–162; Waterhouse to Surgeon General Joseph Lovell, May 23, 1818, Personal Papers, Medical Officers and Physicians, AGO Records, NA; Waterhouse to Lovell, Oct. 18, 1820, Letters Received, AGO Records, NA; Lovell to Waterhouse, Oct. 26, 1820, Letters and Endorsements Sent, Records of the Surgeon General's Office, U.S. Army, National Archives, Record Group 112 (hereafter cited SGO Records, NA).

[42] Throughout his army career Waterhouse lived at home. He was appointed Hospital Surgeon, 1st Military District, June 29, 1813, and discharged on Apr. 14, 1818, with all other Hospital Surgeons, as a result of a new act of Congress regulating the Medical Department. Four days later he was appointed Post Surgeon and in September received duty as medical officer at Charlestown arsenal, later moved to Watertown. He was honorably discharged June 1, 1821. Register of Medical Officers, and List of Officers in the Medical Department 1775–1892, both in SGO Records, NA. His original commissions are in the Waterhouse Papers, Harvard Medical School Library.

[43] Letter dated June 13, 1821, Ford, *op. cit.*, p. 164.

tion.[44] But he retained an ability to enjoy novelties almost to the last, noting in his journal at the age of 85, "Went to see for the first time the giraffe, and relished the sight of that rare animal not a little."[45] On October 2, 1846, just 2 weeks before the first public demonstration of ether anesthesia in the Massachusetts General Hospital, Benjamin Waterhouse died.

As a medical man, Waterhouse is known chiefly for his role in the introduction of vaccination, and it was here that he showed most clearly not only his virtues but also his faults. For one thing he praised himself far more than his achievements deserved. More important, his efforts to profit from monopolistic control of a medical innovation were hardly in keeping with the ethical concepts of the medical profession, then or now, or with his own pretensions to philanthropy. Moreover, he was in fact a promoter rather than an originator. Waterhouse became a skilled practitioner and a zealous advocate of vaccination, but he contributed nothing new to its techniques. This in general was characteristic of his scientific career.

He did not always lend his support as wisely as in the case of Jenner. On March 30, 1813, for example, he penned a testimonial for John P. Whitwell's "Volatile aromatic Head-ache snuff," which the proprietor happily printed in handbills and newspaper advertisements for years to come.[46] Later he steadily supported Samuel Thomson, founder of the medical sect that bore his name, partly because the Massachusetts Medical Society, which "persecuted" Waterhouse, also "persecuted" Thomson;[47] similarly, Waterhouse aided Dr. John S. Bartlett when the latter became embroiled with the Society in the 1830's.

These events occurred late in Waterhouse's career. But in 1783, at a meeting of the American Academy of Arts and Sciences, he had called for works on the history of epidemics,[48] yet he produced little on the subject himself. In an address of 1791 on *The Rise, Progress, and Present State of Medicine* (Boston, 1792), he urged the members of the Middlesex Medical Association to "leave the flowery path of speculation for the more arduous one of experiment."[49] This he did himself, as did many others, when he tested the efficacy of vaccination, but he experimented, in the scientific sense, on little else.

Outside of his writings on smallpox, his only publications of clinical interest were his *Cautions to Young Persons Concerning Health* (Cambridge, 1805), a minor *Circular Letter* (n.p., 1817) on dysentery addressed to the surgeons under his command, and *An Essay Concerning Tussis Convulsiva, or, Whooping-cough* (Boston, 1822), a diffuse work of 152 pages written chiefly, it would appear, because Waterhouse had just had the disease himself. Despite an ample display of book learning the volume shows little sign of original observation beyond the author's own case. As here presented, Waterhouse's own ideas are little more than vague speculation. Very self-revelatory is his prefatory apology: "I have only the apprehension, which is, that in transcribing from lectures composed, and compiled twenty and thirty years ago, I may, sometimes, have used the words of another without being conscious of it."[50]

In his own day, Waterhouse's most popular work was his *Cautions to Young Persons Concerning Health*, which went through at least five editions, including three in Europe. Written at the height of his career, it may be taken as a fair sample of his medical ideas. Chronic diseases, including depraved appetite, nervous disorders, gout, asthma,

[44] Viets, *loc. cit.* (note 5), pp. 605–22.

[45] W. R. Thayer, "Extracts from the Journal of Benjamin Waterhouse," Cambridge Historical Society, *Publications*, 4:33, 1909.

[46] There are several examples in the Waterhouse Papers, Harvard Medical School Library.

[47] Waterhouse, Letters on Samuel Thomson, *Bulletin of the Lloyd Library of Botany, Pharmacy and Materia Medica*, 1909, No. 11 (Reproduction Series, No. 7), pp. 56–63.

[48] Waterhouse, *Of Epidemic Diseases Being a Proposal to Collect the History of All the Epidemics of Our Country in Order, as They Arise, or an Attempt towards Filling Up That Capital Desideratum So. Earnestly Recommended by Sydenham* (Cambridge, 1942).

[49] p. 30.

[50] p. [iv].

palsy, apoplexy, dropsies, and cachexia, were all, he wrote, "owing to *chronic weakness;* the source of which is an imbecility of the digestive organs, occasioning errors in 'the first concoction,' which deranges the whole chain of processes, occurring between chylification and sanguification." The earliest derangement of health, Waterhouse continued, the earliest intimation of chronic disorder, was almost always noted as a sinking feeling in the stomach; first came weakened contractility, and then in order listlessness, paleness, irregular sweats, poor digestion, nausea, torpor, hollowness of the eyes, universal debility and increased irritability, a quickened pulse, labored breath, and finally cough and consumption. A troubled mind caused chronic disease, the author averred, because its first effect was deprivation of the powers of digestion; an indolent life, because without exercise old humors passed off too slowly and the appetite became sluggish; and intemperance, because it involved the application of stimulants and narcotics to the stomach. On this basis Waterhouse inveighed against the greatly increased consumption of wine and spirits at Harvard, in place of old-fashioned cider. But he reserved his strongest words for a counterblast against tobacco worthy of James I: "I have been a Professor in this University twenty three years, and can say, as a physician, that I never observed so many palid faces, and so many marks of declining health; nor ever knew so many hectical habits and consumptive affections, as of late years; and I trace this alarming inroad on your young constitutions principally to the pernicious custom of *smoking* CIGARRS." Thirty years later Waterhouse was still supporting the same dogma.[51]

Similar criticism may also be levied against Waterhouse's work in natural history, which is, after vaccination, his chief claim to fame. Waterhouse's delight, he once indicated to Lettsom, was "transcribing from the great volume of Nature"[52] but his major work in natural history, *The Botanist* (Boston, 1811), shows little evidence that he had. It was largely theoretical speculation and derivative systematizing, written for the general public and designed, as Waterhouse acknowledged apologetically to Lettsom, "to create a taste for that pleasing study, and hence its popular dress and style."[53] At a time when many American botanists were making valuable contributions by describing some of the many new species to be found in this country, Waterhouse added nothing to the fund of scientific botanical knowledge.

At his best, Waterhouse was an active popularizer and promoter, of interest in natural history at Harvard, and of the practice of vaccination throughout the land.

[51] *Cautions* (1805), 8, 27; Waterhouse to Samuel Thomson, Dec. 8, 1835, *loc. cit.* (note 47), 58.

[52] Letter dated Nov. 25, 1794, Pettigrew, *op. cit.*, 2:494.

[53] Letter dated July 19, 1811, *ibid.*, 2:495.

Postgraduate Training of Physicians in Poland

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During the last 20 years there has been extremely rapid progress in science—in some countries it is more marked, in others not so intense. The discoveries made during this period are more valuable than the achievements of some past centuries, especially concerning medicine. Unfortunately, not everyone could be co-creators in medicine, nor could all be even witnesses of this tremendous progress in medical science. During World War II all the Polish schools, universities, and scientific institutes were closed. The situation was particularly serious because not a single publication of professional literature appeared. It is no wonder, therefore, that, when the war was over and Poland received the first foreign magazines and books, we felt a real shock—since a deep precipice had formed between us and our comprehension of the modern achievements of science.

Not all the efforts and all the means could be used in Poland for promotion of science. Poland lost 6,000,000 people during the last war, the country was greatly devastated, misery was ubiquitous, and there were great epidemics. At that time there were 6,000 physicians for 23 million inhabitants. Intense work has since begun. It was not the first time in the history of our nation to start anew on ruins and ashes.

Gradually the universities were opened and work was started by the faculty of medicine. During the first stage the main emphasis was placed on building houses, on agriculture and cattle-breeding, and on the re-building and expansion of industry. At the present time there are ten departments of medicine, and the number of physicians amounts to 23,000 for 28.5 million of inhabitants. The winning of the battle for the number of physicians does not mean winning the battle with reference to their qualifications.

In the Health Service at present the majority is comprised of young physicians at the age of about 30 years. Most of them, after obtaining their diplomas, take only a short clinical training in clinics and large hospitals. Therefore, there is a great difference in standards between scientific institutes, clinics, and large hospitals, on one hand, and young physicians in practice in small towns and rural areas. Poland faces the important task of improving the qualifications of physicians. They must be taught up-to-date principles of physiopathology and acquainted with new medical techniques. It is obvious that the postgraduate training of physicians requires an improved curriculum and organization. We are aware that our problems can be solved only by means of postgraduate training, and have taken into consideration three concrete facts: (*a*) knowledge acquired by the physicians at the universities, (*b*) the most vital defects and errors made by physicians working in the provincial areas, and (*c*) the economical possibilities of our country. An analysis of these facts has led to the statement that physicians receive, as a rule, sufficient theoretical preparation but that the practical training and experience is not sufficient. It is also realized that the physicians working in the provincial areas had considerable work, that their salaries were small, and that the system of postgraduate training had to be developed in such a

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way as to form economic stimuli. The solution of these problems occurred in 1953. There have been published detailed regulations concerning specialization training. We have distinguished 32 disciplines in which the process of specialization became possible. A year after obtaining the diploma the physician notifies the administrative authorities, sending in the name of the specialization and the date of beginning training, and gives the name of the person who is in charge of the course and who is responsible for the carrying out of the curriculum. The young physician works in a hospital, makes rounds, performs different procedures and operations. The course of his work and the results of the colloquium taken in 3-month intervals are written down in a record book in which the course of the specialization is registered. After fulfilling all the prescribed requirements the physician sits for the examination in his specialization, before a committee acting in the particular district. After passing the examination the physician becomes a specialist of the 1st degree, i.e., of a lower degree, obtaining, thus, a raise in salary and the right to begin specialization of the 2d degree. The procedure of the program at this stage includes clinical practice in a hospital which is large and well equipped. The physician now also has a specialization book, goes for colloquium every 3 months, and sits for the final examination for the 2d degree. The examinations are partly practical and partly theoretical, and a proficiency in two foreign languages is required. On obtaining the 2d degree, the physician again receives a raise in salary, and this degree is an indispensable requirement for the physician who is in charge of a hospital ward. The curriculum of specialization of the 1st degree requires at least 3 years of work; the program for the second degree requires the next 3 or 4 years. To illustrate, I shall give the types of hospital practice required for the examination for the 1st degree in internal medicine: work in the ward for internal medicine—26 months; infectious diseases—3 months; tuberculosis—2 months; pediatrics—2 months. For the 2d degree: work in the ward for internal diseases—28 months; neurology—2 months; in the Department of Pathologic Anatomy—1 month; Department of Radiology—2 months.

Since January, 1953, the second catalyst of postgraduate training of physicians has been active—it is the Institute of Post-Graduate Training of Physicians. The opening of this Institute has been a novelty in Poland. Looking at it from the perspective of 5 years, we have come to the conclusion that in our situation the Institute has to fulfill a great role at the present and in the future. The activity of the Institute of Post-Graduate Training of Physicians is developing in several directions.

1. The most vital task is the inviting, to clinics and departments of the Institute, the practicing physicians who work in small-town hospitals, out-patient departments, or in rural areas. The physicians are invited for 3–4 months. They receive their full salary; traveling expenses as well as lodging accommodations and board are covered by the Institute. The courses at the Institute are also without charge. In this way we have removed the economical factors which could have handicapped those wishing to take up postgraduate training at the Institute. In the clinics the postgraduate teaching is carried out by means of seminar methods. During the 3-month course, e.g., in the Clinic for Internal Diseases the following themes are discussed: acute and chronic circulatory insufficiency with left ventrical prevalence, acute and chronic circulatory insufficiency with right ventricle prevalence, cardiac infarct, hypertension disease, vasculo-cardiac syphilis, clinical electrocardiography, atypical pneumonia, cancer of the bronchus, bronchial asthma, diseases of the bile tract, virus hepatitis, cirrhosis of liver, pathology of intestines, glomerulonephritis, nephrosis, diseases of thyroid gland, diabetes, suprarenal hormones, rheumatic fever, anemia, the leukemias.

The physician must acquaint himself with the required literature and must pass three colloquia. After 3 months of training

the physician receives a certificate of having attended the course, and also a professional evaluation of qualifications. The Institute at present has 46 didactic centers (Warsaw, Bydgoszcz, Łódź, Wrocław, Bytom, Zakopane). During the 5 years of existence a total of 4,844 physicians were trained during 3–4-month courses.

2. There is another form of activity—the conducting of short, 2–4-week courses devoted to lesser branches of the subject, e.g., blood transfusion and its complications, protection of water and air, virus hepatitis, care of the premature infants, medical statistics, etc. It should be mentioned that such courses are open to all in the entire territory of Poland. The Institute covers the expenses, chooses the director of the course, receives reports.

During the 5 years of activity of the Institute 7,925 physicians participated in these courses.

3. A special form of activity is the awarding of scholarships for specialization. The Institute grants scholarships to young physicians and pays for the 3 years required for an accurate preparation for the examination of the 1st degree of specialization. Scholarships are granted, particularly in those disciplines of medicine where there are too few specialists—e.g., epidemiology, psychiatry, medical analytics, forensic medicine, etc. At the present moment in the whole territory of Poland specialization is taken up by about 800 of the physicians who received scholarships. After passing the examination of the 1st degree they will no longer receive a scholarship, but on their own initiative undertake the specialization of the 2d degree. In receiving the scholarship, the physicians are not under obligation to return the scholarship or to repay, by work, the sum granted by the Institute of Post-Graduate Training of Physicians; nor are they under obligation to the Ministry of Health. We are only interested in having these physicians carry out their program of specialization without any difficulties.

4. The Institute of Post-Graduate Training determines the programs of specialization and introduces changes relative to concomitant scientific advancements. At the present time the programs are being changed; the period required for hospital practice will be prolonged, new types of operations are being introduced, acquaintance with up-to-date appliances and apparatus is requested, and modern laboratory procedures are being included. In this way we expect to raise the level of knowledge of our physicians. The Institute goes to great lengths in carrying out so-called arbitrary activities. The Ministry of Health has asked the Institute to look into all matters concerning the obtaining of the degree of specialization. We intervene in cases of disagreement between the physician preparing for specialization and the director of the course of specialization; we are concerned with the proper level of the examinations, we counteract over-zealous behavior of the administrative authorities, etc.

5. The Institute of Post-Graduate Training for Physicians also conducts research. Depending on the financial means, we supply reagents, apparatus, instruments, cover the expenses of experiments on animals. This type of activity is important, and it is organically connected with our didactic aims. We do not want to see among us only teachers and erudites—we want our professors, docents, and assistants to have their own scientific contribution to offer. Besides publishing in the medical periodicals we publish manuals and handbooks. Articles with particularly interesting titles were printed last year. Among these the following are of particular interest: *A Survey of Physiology of Work of Man* (153 pp.), *Preventive Medicine in Medical Practice* (430 pp.), *Analytic Optic Methods*, 2 volumes (469 pp.).

The Institute of Post-Graduate Training of Physicians in the current year employs as regular or part-time employees: 36 independent scientific workers, 106 auxiliary scientific workers—in total, 142 scientific workers.

The budget of the Institute is gradually increasing, which shows that the authorities appreciate our aims and that we are sup-

ported by the Ministry of Health. Taking the budget in 1953 as 100 per cent, at the present time we possess financial means in the comparative scale of 217 per cent. We have built two modern hotels for physicians who are called to the Institute; the hotel in Bydgoszcz offers good accommodations for 85 physicians; the hotel in Warsaw, which is also the property of the Institute, accommodates 280 physicians. During the next 2 years we expect to complete the building of our own clinical hospital of 600 beds; we are also erecting a separate building which will house a special department for research work. Our library consists of valuable books and manuals. In Warsaw we subscribe to 403 periodicals, which include 303 in foreign languages. There are 86 periodicals in English (this includes also the *Postgraduate Medical Journal*).

In conclusion, I should like to add that the matter of postgraduate training of physicians in Poland has been solved in the proper way for our conditions; I am sure that every country must organize the problem of postgraduate training of physicians taking into consideration the traditions of the given country, the social system, the concrete needs and possibilities.

We should like in the near future to publish the program of specialization for the general practitioner. We expect that the program consisting of basic training in internal diseases, pediatrics, obstetrics, and surgery will encourage physicians, expecially those who perform their duties in small health centers, since they have a justifiable ambition to obtain the privileges which are identical with those of specialists.

ACKNOWLEDGMENTS

Allow me to take this opportunity to thank the representatives of W.H.O. who visited our Institute and were interested in its work. I should like to express my gratitude to the Rockefeller Foundation for the granted scholarships.

I am also taking this opportunity of sending best regards to Dr. Cecil W. Clark of Cameron who was considered the General Practitioner of the Year; we have read with pride in the *J.A.M.A.* about his abilities as physician and the courage of a real man.

A Survey of the Teaching of Nutrition in Medical Schools

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As one phase of our over-all curriculum study, we have made a survey of the teaching of nutrition in the majority of medical schools in the United States. Because of the apparent interest in this subject and the many inquiries concerning this survey, it was thought worth while to report the results.

Questionnaires were sent to a total of 66 approved medical schools in 32 states and the District of Columbia, and completed questionnaires were received from 60 of them, representing 29 states and the District of Columbia. Both the percentage of response of 90.9 and the geographical distribution of the medical schools responding were considered to be very good, and it is believed that valid conclusions may be drawn from this survey relative to the teaching of nutrition in medical schools—recognizing, at the same time, the limitations of such studies.

The data presented in Chart 1 indicate in a rather conclusive manner that the major responsibility of nutrition teaching falls in the domains of biochemistry, medicine, pediatrics, and physiology.

Although the majority of the persons answering the questionnaire felt that nutrition should be taught in an integrated manner, many expressed the urgent need for better training of the students in the basic fundamentals of the field by giving such information in a special course. Table 1 summarizes the results of the type of nutrition course offered. Even though 95 per cent of the institutions reporting indicated that they offered nutrition in an integrated manner—undoubtedly the remaining 5 per cent offered it to some extent, at least, in an integrated manner—the results of this part of the questionnaire clearly indicated that integrated nutrition teaching in the majority of the medical schools is of such a nature that it is not well coordinated and that it does not make much impact as a subject on the medical curriculum.

The survey data concerned with the staff employed in teaching nutrition are summarized in Table 2. Some of the schools that reported the use of special staff members indicated that they were regular staff members, with training in the fundamentals of nutrition, whose primary interest was in this field.

Only four schools (6.8 per cent) indicated that they required special texts in the teaching of nutrition, exclusive of the use of hospital diet manuals. Although 54 schools (92 per cent) did not require special texts, five of these institutions either required or recommended special references. Of the twelve schools that offered special courses in nutrition, only two required a special text. Some of the texts listed as being used were: *Handbook of Diet Therapy* by Turner, *Nutrition and Diet in Health and Disease* by [illegible]by and McLester, *Modern Nutrition in Health and Disease* by Wohl and Goodhart, *Food Values of Portions Commonly Used* by Bowes and Church, and various hospital diet manuals.

A list of some topics covered in the inte-

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grated and special nutrition courses is presented in Table 3.

In general, nutrition is being taught through the media of lectures, conferences, and laboratory experiments; a few respondents indicated the occasional use of seminars.

nutrition in the Junior and Senior years. In most instances this involved conference groups with the collaboration and cooperation of a dietitian.

Five of the twelve schools that offered a special course in nutrition gave the course

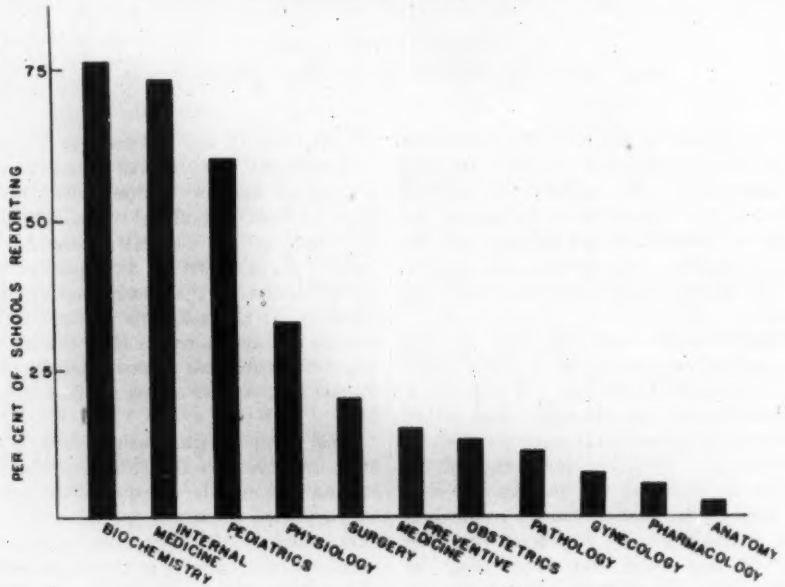

CHART 1.—The per cent of schools reporting nutrition taught in various areas

TABLE 1

TYPE OF NUTRITION COURSE OFFERED IN MEDICAL SCHOOLS

Type of course	No. schools*	Percentage
Integrated	56	95
Special	12	20
Integrated and special	9	15
Integrated only	43	73
Special only	3	5

*Total number of schools answering this part of questionnaire was 59.

TABLE 2

STAFF EMPLOYED IN TEACHING NUTRITION

Staff	No. schools*	Percentage
Regular	58	98
Regularly exclusively	28	47
Special	25	42
Special exclusively	1	1.7
Regular and special	22	37

*Total number of schools answering this part of questionnaire was 59.

Students, particularly in biochemistry, participate in preparing diets, feeding and caring for experimental animals, developing nutritional deficiencies in animals, keeping records, presenting experimental data and preparing literature surveys. Several institutions reported their method of teaching

during the second year and five gave the course during the third year of the medical curriculum. The clock hours of instruction reported for the special courses in nutrition ranged from less than 10 to more than 40 with an average of 21.

As indicated in Table 4 the adequacy of

the nutrition teaching was qualified by seventeen schools (28 per cent), with the general feeling and recognition that there exists a real need for improvement, and there were a number of interesting comments relative to means by which this may be accomplished. These comments ranged from a feeling of the need for more basic or higher level scientific studies in nutrition in the first 2 years to a greater use being made of the nutrition specialist in the third and fourth years—perhaps through conferences or ward rounds—and more training in therapeutic diets. The following comment received from one institution seems to be apropos at this time. "Since our major diseases, such as obesity, dental caries, diabetes, cardiovascular and kidney diseases, are associated in part with faulty nutrition, more emphasis should be given to this subject in the medical curriculum; nutrition is rapidly becoming an important tool in the hands of the modern physician."

TABLE 3

A TABULATION OF SOME TOPICS PRESENTED IN THE INTEGRATED AND SPECIAL NUTRITION COURSES

1. Metabolism of carbohydrates, proteins, fats, and minerals.
2. Vitamins and nutritional deficiencies, the pathology of deficiencies and excesses as well as the clinical and laboratory diagnosis of nutrient deficiencies.
3. Diet therapy—low sodium, low calorie, low and high protein, low fiber, high residue, high and low fat, low purine, reducing, bland, low cholesterol, and diabetic; general principles of therapeutic diets.
4. Protein factors in nutrition, malnutrition, Kwashiorkor, starvation, obesity, basic normal nutrition, composition of foods, nutritive values of common food groups, the basic seven food groups, formula feeding, recommended daily dietary allowances, nutrition in geriatrics, nutrition in cardiovascular disease.
5. Classification of foods according to the economic, religious, educational, and psychological backgrounds of individuals and regional food habits.

Although the need for nutrition teaching in the standard medical curriculum is recognized, this survey revealed that in many instances very little attention is directed to the organization and coordination of nutrition teaching. As pointed out by Stare (1) in his comments concerned with the importance of nutrition in the standard medical curriculum: "...yet in most medical schools, organized instruction in nutrition is sadly neglected, despite 'lip service' to the contrary." If the author may suggest, one apparently effective approach to the teaching of nutrition to medical students is amply presented in the reports by Stare (1, 2).

TABLE 4

ADEQUACY OF THE NUTRITION TEACHING

	Is the nutrition teaching adequate?		
	Yes	No	Qualified
Number of schools	30	11	17

ACKNOWLEDGMENTS

The author wishes to take this opportunity to thank the deans and faculty members of the medical schools who contributed to this study by supplying information; to thank both Dr. D. T. Rolfe, Dean of the School of Medicine of Meharry Medical College, and Dr. Harold D. West, President of the College, for their interest and valuable suggestions in this study; and to thank Dr. Matthew Walker, Chairman of our Curriculum Committee, for his encouragement during this study.

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The Canadian Student—Western Style

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The Faculty of Medicine of the University of Alberta is a fully accredited coeducational medical school and is an affiliate member of the Association of American Medical Colleges. Its students are fairly typical of those found in any Canadian medical school.

The University of Alberta, an institution financed largely by the Province of Alberta, is located in Edmonton, a city of 250,000 people in the geographic center of the province, about 400 miles north of the United States border. The provincial population is 1,100,000, and largely from residents of Alberta the Faculty of Medicine each year selects about 60 applicants to make up its freshman medical class. At the present time registration of students from homes located outside of Alberta is very small.

Alberta is basically an agricultural province, but the discovery of rich oil and gas resources has created a swing to industrialization in recent years. The cost of living in Edmonton is fairly comparable to that in any Canadian city and a bit above that of the average American city.

Students come to our University with senior matriculation, which means that they can obtain a B.Sc. degree in 3 years, instead of 4 as in most American institutions. In general, this degree is equated, on both sides of the border, with an American B.Sc. Apart from having no football team to cheer, an Alberta University student bears a pretty close resemblance to his American counterpart on superficial examination. However, he is generally admitted to medical school with 2 university years, although about one quarter of our students have taken one more year and have obtained a B.Sc. degree. Many American medical schools admit students who are still a year short of their B.Sc., so their freshman classes and ours are at a fairly comparable stage in their education.

Our average first-year medical student is a young man who comes to us at about the age of 20, usually unmarried, with two completed university years beyond senior matriculation and with just 4 required university subjects: inorganic chemistry, organic chemistry, physics, and zoology. His other six courses will vary considerably but will almost certainly include English and at least one or two courses in the humanities.

To find out more about our students we searched our records and also circulated an anonymous questionnaire among the 218 students registered in all 4 years of our faculty in 1957. (Of these 204 returned completed questionnaires.) The findings were very enlightening to us and are presented here in the hope that they will be of interest to many medical educators, who may be unfamiliar with the Canadian scene.

SOCIAL AND FAMILY BACKGROUND OF OUR STUDENTS

It is reported by our provincial government statisticians that the average family income in Alberta is about $5000 per year, and we find that about 60 per cent of our students come from homes where the income is at or below the provincial average. Indeed about 11 per cent of our students appear to come from families where the income is $2000 or less per year; this group is largely from farm homes.

Practically every occupation found in

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Alberta is represented among the parents of our students, and the major classifications are surprisingly fairly represented on a population basis. About twice the number of students that one would expect, on a population basis, come from professional homes. Much of this discrepancy is accounted for by the children of doctors, who really do seem to follow in their father's footprints. About 0.1 per cent of Alberta's working population are doctors, but 6 per cent of our students report that their fathers are medical men.

The list of occupations of parents is long and will not be repeated here, but it ranges from laborers through mechanics, grain elevator operators, lawyers, druggists, clergymen, waiters, and salesmen.

Farm homes are reported by approximately half (22 per cent) of the number of students that one would expect on a population basis. The employee class is fairly represented; about one third of our students have fathers in the employee class, and one third of Alberta's work force is in the employee category.

While it is often assumed that people living in cities, and especially in those cities in which the medical schools are located, are more likely to attend medical school, this is clearly not the case in Alberta. When the figures for location of homes of students are corrected for those who moved their homes to Edmonton since coming to University, or when they knew they were coming to University, it appears that all sections of the province are fairly represented on a population basis and that neither rural, small town, nor city dwelling has any real influence on whether or not a person will come to medical school.

One difference between typical Canadian and typical American medical students is that, in general, the Canadians try to go to the medical school closest to their homes, whereas Americans are much more likely to travel to a school that is farther afield. One reason for this difference is undoubtedly financial, since 25 per cent of our students report that they could not have afforded to go to medical school if there had not been one at the University of Alberta.

ACADEMIC BACKGROUND

In common with many medical schools in Canada and the United States we find that we are unable to get as many first-class applicants as we would wish to fill the available places in our first year. Basically, our students are expected to have at least a B average (or a 2.5 grade point average in U.S. terms) in their university premedical work. A "B" average in Canada is 65 per cent based on a 50 per cent pass mark; again, this may seem to be different from standards in the United States, but, judging from students who have studied in both countries, the knowledge required for a pass is about the same in each and the A, B, and C categories are fairly comparable.

Since we get few good applicants from other universities in Canada or the United States, we find that we do not have a major problem in attempting to equate averages from perhaps hundreds of universities and colleges in terms of our own standards, as many American medical schools must do. This is one reason why we do not require our applicants to take the Medical College Admissions Test.

Chart 1 is based on the premedical average in all subjects for 520 University of Alberta medical students. It shows a remarkable degree of correlation between premedical average and performance in medical school. Over the years we have found the premedical academic average to be by far the best indicator of success or failure in medical school. For this further reason, and also because the M.C.A.T. test is at present based on the American scene, we do not demand this test, although we do require all applicants who can (and this includes all Alberta applicants) to have a personal interview.

It should be explained that only a dozen or so students are represented by the column "less than 65%." These are students who came close to the 65 per cent average and had a good second premedical

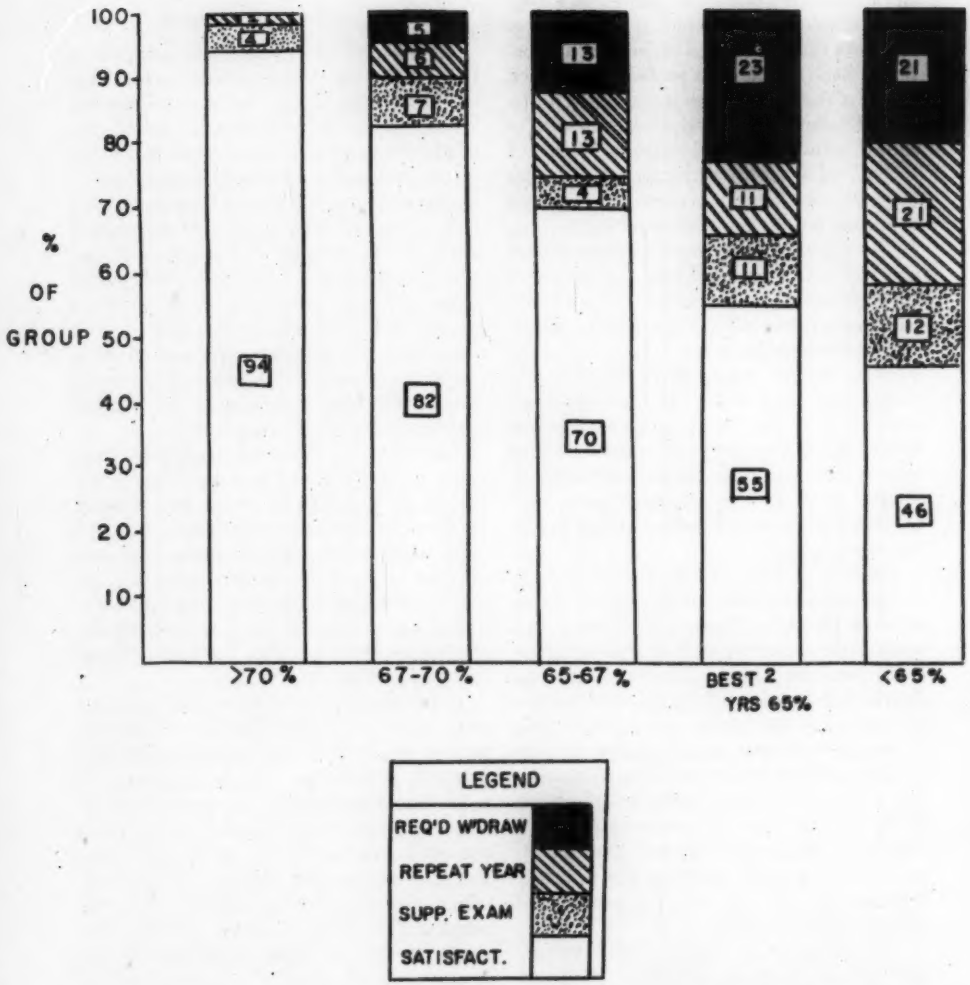

CHART 1.—Correlation of the average on admission to performance in medicine (for 320 University of Alberta students)

year. Even so, it is clear that they have only an even chance of complete success. The same applies to those who have taken a third year in an endeavor to raise their averages. Apparently, if a student cannot show a 65 per cent average in 2 years his chances of success in medical school are still only fair, even if he buckles down and raises his average to the required figure.

We who sit on admissions committees wonder whether we are justified in accepting individuals who have only a 50 per cent chance of complete success in their courses, and, conversely, if we would be justified in eliminating a whole group, half of whom would be expected to have a completely satisfactory record in medical school. On past experience the M.C.A.T. test did not seem to help us much with this problem, but possibly, if proposed changes in it are instituted, it may become of more value.

Most of the students whom we do not require to withdraw but who must repeat a year, or take a supplemental examination, are eventually successful in obtaining their M.D. and in subsequently passing the Medical Council of Canada examinations. These examinations are set in Canada by a statutory body and have nation-wide recognition; this seems to us a distinct advantage over the national board examinations in the United States, which are not recognized in all states and from which any state may withdraw recognition almost at will. The Medical Council of Canada examinations provide each school with a yardstick against which they are able to judge the performance of their students and so determine the adequacy of their teaching programs.

MOTIVATION: POSITIVE AND NEGATIVE

Our students were asked to answer (anonymously) a question concerning their motive for entering medicine. Fifty-five per cent gave an interest in the general subject as at least part of their motive, 42 per cent noted an interest in their fellow men, and 39 per cent mentioned social prestige as a factor in their decisions. It is of interest to note that 2.5 per cent intend to become medical missionaries, and it may come as a surprise that very few mentioned the independence a doctor is supposed to enjoy as a factor in turning them toward medicine.

Since the supply of desirable applicants is less than we would like, the students were asked if they knew of anyone who had contemplated entering medicine and then failed to do so and the reason they did not enter. The results are listed in Table 1.

Clearly, of those who have a satisfactory academic record, less than half of the potential applicants who turned away did so for entirely financial reasons. The present length of the medical course, plus the effort that must be expended to complete it satisfactorily, when combined form a deterrent even more important than money. Even so, it should be kept in mind that the complete course from university entrance until completion on internship in most Canadian universities takes 7 years instead of 8 or 9 as in most American centers. It will be interesting to see if the new Johns Hopkins plan, which will allow completion in 7 years, will draw an increased number of good applicants.

TABLE 1

REASONS FOR NOT APPLYING TO ENTER MEDICINE

Reason prospective students did not apply	No. prospective students
Poor academic record	130
Financial	123
Length of course	86
Rewards not worth the money and effort	51

One interesting answer, given here verbatim, indicates that high school standards, at least in mathematics, are a problem not just limited to the United States.

> "Secondly the standard of mathematics was considerably lowered in high schools during the last few years. Although my mathematical ability was very good, the lowering of standards in high school influenced me against entering a field of study involving an extensive use of mathematics."

THE MEDICAL STUDENT HIMSELF

We have considered the background of our medical students, and we now come to the problems these people must face once they are admitted to our medical school.

Financial problems.–In common with medical students the world over, our students must face the high cost of obtaining their education. Unlike many countries where many scholarships are available, or where state aid relieves the burden almost entirely, our students, in general, must rely on their own resources.

The Province of Alberta in cooperation with the Dominion Government is able to provide loans and grants to needy students, under the Students' Assistance Act, which may cover up to about one quarter of the over-all cost of getting through medical school. Such loans are repayable after internship. The grants are based on scholastic competence and are not, of course, repayable. About 25 per cent of our students in the past year took advantage of this source of funds and received a total of $17,000 in loans and/or grants.

TABLE 2

THE COST OF MEDICAL EDUCATION

(without fees)

Estimated cost per year	No. students reporting
Less than $800	44 (29 of these have free room and board)
$800-$1000	50 (2 of these have free room and board)
Over $1000	105 (52 of these are married)

Apart from this source and a few small scholarships (the best valued at about $200 per year), the students can expect no university aid.

Fees at the University of Alberta Medical Faculty vary from about $350 in first year to $510 in fourth year, with $41.25 added incidental fees that all university students must pay. On top of this, room and board for the 8½ month term is about $510. Books and clothing will be another $100 each. Other expenses such as travel, entertainment and miscellaneous will vary from individual to individual. Complete medical care during the term is provided by the student health services of the university.

Students were asked to estimate their expenses for an academic year (apart from fees), and the results are shown in Table 2. From this it will be seen that, by careful management, about one fifth of our students can get by with an outlay of less than $800. However, since only fifteen of these must pay for their room and board, a corrected estimate would indicate that only about 7 per cent of our students have total expenses of less than $800 per year, plus fees. About half of the unmarried students need less than $1000 per year, plus fees.

It might be added that, in computing comparable costs between countries, the Canadian dollar is roughly equivalent to the American dollar. On the day that this is written the Canadian dollar is at a 3¾ per cent premium over the American dollar.

TABLE 3

SOURCES OF STUDENT INCOME

Chief source of income	No. students reporting	Percentage of students reporting this
Summer work	127	63
Assistance from parents	34	17
Income of wife	31	15
Self and parents equal	6	3
Other	4	2

It should be noted also that the University of Alberta supplies microscopes for its students, so they are spared this expense.

Since the average student must find an estimated $1300 to $1500 per academic year to take care of all of his expenses including fees, he must obtain his income in various ways. The main sources of income and the percentage of students reporting them are listed in Table 3.

Of the 202 students who gave the information in Table 3, 16 per cent are putting themselves through university with no outside aid except for some help from the Students' Assistance Act funds already noted (in a few instances). This means that a substantial number (32/202) of our

students are independently getting their medical education.

About 30 per cent of our students (whether married or single) find they must work during the term to help put themselves through university, but only one quarter of these (or about one student in every twelve in medical school) are working in hospitals, for room and board, with or without added remuneration. The rest clerk in stores on Saturday afternoons or do some similar work. Occasionally students demonstrate in university laboratories.

Only one quarter of those who work during the term feel that this seriously interferes with their class work.

About 66 per cent of our students estimate they will be in debt by the time they graduate and that the amount of indebtedness will run from a few hundred to several thousand dollars. However, in the records of the Dean's office there is no student who had to completely withdraw from medicine for solely financial reasons, although one or two students, in any calendar year, may have to withdraw for a year to recoup their financial positions.

Marriage.—Medical educators realize that a large number of the students, particularly in the higher years, are married, the percentage running as high as 75 per cent among seniors in some American medical schools according to information received at the Teaching Institute of the A.A.M.C. held in October, 1957.

At the University of Alberta about 50 per cent of the students in the final 2 years are married, with lesser percentages in the earlier years, as is shown in Table 4. However, no matter what year of the medical course he may be in, one married student in three has one or more children. The incidence of children bears no relationship to the year of the medical course in which the student finds himself. In fact, in each of the past 2 years one first-year student had four children. I believe we would all admit that this presents a certain handicap to these particular students.

Only 7 per cent of our married students depend largely on their families for support. Most depend on the earnings of their wives (31 of 57 married students), and almost all the others depend on their own summer earnings. The married students come from such a variety of backgrounds that there is no one group unduly represented. Looked at from another viewpoint we may say that about 15 per cent of all our students depend on their wives for the major share of their incomes.

When children arrive to complicate the problem of wives earning their share of the family income, we find that in three quarters of the cases the wife looks after the children and in one quarter they employ babysitters or relatives to look after the children. In two cases the wife looked after the child and still managed to earn the largest share of the income. One case here is of interest. The husband returned home from classes and spent the evenings looking after the baby and studying while his wife went out on night nursing duty. She somehow managed to keep awake to look after the baby in the daytime. Their sacrifices have paid off, and this spring the husband received his M.D. Unfortunately the university offers no certificate to the wife in a case like this, although she surely deserves one!

TABLE 4

MARRIED STUDENTS

Year of course	No. students in year reporting	No. married	Per cent married
1	58	4	7
2	56	11	20
3	45	22	49
4	45	20	45

In our records only one female medical student had a child before graduation.

Most married students do not feel that their grades suffer because they are married, and this is borne out, by and large, in their records. As stated above, marriage does not appear to force students to work during the term to earn enough to get through the year.

In common with the medical educators I talked with at the last two Teaching

Institutes, we feel that the advantages and disadvantages of marriage, for the undergraduate, are fairly well balanced and that no serious harm is done to the marriage or to the personalities of the participants in the great majority of the cases. However, we do note that many promising postgraduate careers are curtailed, postponed, or even entirely prevented by the added burden that marriage imposes.

Student worries.—Medical students the world over are known to be chronic worriers, but when they were asked if they had any worries (apart from academic) that might prevent their graduation, 57 per cent of our students reported no such worries, about 20 per cent reported financial problems, and over 10 per cent reported personal problems that might prevent graduation.

Seven per cent of our students report anxieties about their mental health that they feel may prevent their graduation. Most of these worries are probably baseless, although it is distressing to have to report that, in recent years, perhaps one student per calendar year has had to withdraw because of mental instability. Usually these cases respond to treatment, and the student is able to return to the medical faculty or to some other faculty within a year or less.

Transportation.—Medical students at the University of Alberta take most of their work at the University Hospital, which is on the university campus and presents no transportation problems. However, certain other hospitals are used which are several miles away from the main teaching centers. The problem of transporting students could be a major one were it not for the fact that by the time they reach final year almost half our students have cars. Thus, with a bit of cooperation among students, the difficulties of reaching distant hospitals are relatively easily solved.

The student: a composite picture.—The average University of Alberta medical student may come from any part of the province but only occasionally from outside of it. The location, within the province, of his home and the occupation of his parents have little effect on whether or not he will come to medical school. Even the income of his parents seems to bear little relationship to whether or not he will come to medical school, if his motivation is strong enough.

This motivation is usually based on his interest in the field of medicine, but he gets some satisfaction from knowing he will serve his fellowman, and he is human enough to admit that he is glad that, as a doctor, he will have relatively high community standing.

If he fails a subject, or a year, but is allowed to remain in the faculty he will probably eventually receive his M.D., but may have further academic difficulty before he reaches this goal.

There is an even chance that he will have a wife or a car (or both) before he graduates, and if he does marry there is one chance in three that he will have children before graduation; one sixth of his fellow graduates will be fathers.

Whether married or not he will probably find himself in debt by the time he graduates in spite of the hard work he puts in each summer. This summer work gives him his main source of income, but he will probably have to rely on parents, or wife, for additional financial help. One student in four will have to borrow money from funds controlled by the university before he completes his course.

It is unfortunate that too many of his friends who contemplated applying for medicine have changed their minds, usually because the financial problems involved or the length of the course and the hard work entailed have scared them off. He thus finds that many of his fellow medical students have entered with relatively poor academic records, and some may have trouble passing their courses, although the great majority of those accepted will eventually obtain their Doctor of Medicine degrees.

For My Son, Now Qualified

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A BRITISH PHYSICIAN DEFINES THE ROLE OF GENERAL PRACTITIONER UNDER NATIONAL HEALTH INSURANCE SYSTEM

The practice of medicine can be divided into three large sections, (*a*) preventive medicine, (*b*) the hospital service, and (*c*) general practice, each section in itself being a specialty, and all of them of equal importance in the service of the nation. They each have a special function, therefore, which can be defined as follows:

(*a*) Preventive medicine, including general public health, and basic services in regard to water supplies, sanitation, food inspection, atmospheric pollution, vaccination, immunization and social welfare, should also *teach* positive health, in an attempt to raise the level of human vitality both physical and mental. If this specialty is really successful, then the labors of the other two specialties should diminish. The cost of this service should be met out of the rates levied by the local authorities.

(*b*) The hospital service has for its chief functions the diagnosis and treatment of accidents and *major* illness, which, as these necessitate the use of elaborate techniques which are costly, should devolve essentially on state funds for its maintenance.

(*c*) General practice has for its primary function the treatment of *minor* ailments, and the provision of domiciliary midwifery. Since this service is essentially a personal one, the cost *should* be on the individual patient, and, whatever system of insurance against ill health is adopted, it should be voluntary in principle.

These definitions, it is hoped, are clear enough to form a working basis, on which the prospective candidate for one of the three specialties can lay his fancy. It is obvious, in these days of overspecialization, that he will be forced to define his interest even more minutely, and he may have to do this so early in his career that his judgment on the relative values of these various branches may be immature and unreasonable. It is important to emphasize the need for cooperation among the specialties, a respect for one another and one another's function, a recognition of the fact that there are clear-cut boundary lines between them which can only be wiped out when the population to be served is too small to require any kind of specialization whatsoever.

The medical graduate who has chosen to enter the specialty of general practice should know enough of the goings-on of his fellow specialists—hospital service and public health—to fit his own work into the machinery without crashing the gears. He will have acted for a year as a hospital resident before registration, and he may feel that another year in the hospital service, especially in the casualty and obstetric departments, would be well spent before he enters general practice. During this time he will be seeing general practice with the critical eyes of dogmatic youth, and the vantage point of the receiving room will teach him how variable general practitioner responsibility can be. He will be tempted to look down on the G.P. who uses the hospital as a dump for his problems, and may even sneer metaphorically into the telephone when so-and-so is sending in a case! This relationship can only be modified and adjusted when he himself is speaking

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at the request end of the line; and the crux of the matter is where the minor malady of general practice crosses the border and becomes the major illness of the hospital service. Hitherto, he has been nurtured on major disease to the almost complete exclusion of the clinical material of general practice, and the responsibility he has had to bear has been fully covered by the consultant staff of the hospital he serves. It behooves him during his house jobs to appraise the value of the various techniques employed in the hospital, especially the x-ray and laboratory techniques, which play so important a part in the decisions taken on behalf of the patient. Meanwhile, he must never neglect the practice of clinical diagnosis as he will be so tempted to do, because in general practice he will need to keep in mind the fundamentals of interpretation in looking at his patient's tongue and listening to his heart. Moreover, by knowing what the x-ray and laboratory services can do for him, by learning to interpret their interpretations, and, on the other hand, by developing in himself a sound clinical approach, he can with greater confidence determine the need for these extra diagnostic techniques. He may not know it at this stage, but the seed has now been sown which will grow into that mutual respect between himself and his local hospital which will earn for him high praise—the status of a first-class G.P.

Equally important, but from another angle, is the general practitioner's relationship with the local health authorities. On his side, he is responsible for the notification of infectious disease, if, in his opinion, one of his patients is so suffering; and this responsibility he should take seriously, since the control of infection depends on the collaboration of both general practitioner and hospital staff with the Public Health Department. If he is in doubt regarding a notification, e.g., of tuberculosis, he may prefer to leave this to the Chest Physician or Tuberculosis Officer in his area, but this arrangement should be clearly understood by them both, so that there is no failure to set the machinery in action to help not only the family in which the infection is discovered, but also to protect the population generally against the dangers of that infection. The Health Department, on its side, can be of enormous assistance to the general practitioner if he is willing to acknowledge this, not only in matters of prevention, but in the actual treatment of his patients in their homes. The health visitor, from maternity and child welfare clinics, or from school and chest clinics, can help the general practitioner solve the domiciliary problems which may be the basic cause of the illness he is trying to treat; and the District Nurse, now also on the staff of the Health Department, can contribute, as always, her practical quota in the patient's treatment, especially where her specialized training is required. Finally, as the problems of old age increase steadily in magnitude, the resources of the Welfare Section, and the associated geriatric unit of the local hospital, are there, at the call of the general practitioner who, e.g., trying to alleviate the stomach ache of the young mother who is striving to cope with an aged relative on top of her growing family, realizes that magnesium trisilicate only adds insult to injury.

The study of symptoms.—The subjective complaint of his patient is, nearly always, the general practitioner's first point of contact with an individual whose well-being—or ill-being—becomes the doctor's privileged concern. In fact, this *is*, largely, the doctor-patient relationship, and it imposes on the doctor, first, the need to study symptoms and, second, the sanctity of the privilege. He must be a good listener, alert to the emphasis which the symptom expresses, so that he can classify, in his own way, the type of person he is dealing with. Broadly speaking, his patient, at the one extreme, is of the sympathetic type, or, at the other, the plethoric insensitive type; and the estimate of this psychosomatic balance is of the utmost importance in the privileged approach the doctor should adopt. The general practitioner who "treats 'em all alike,"

is, in spite of his honest John Bluntness, lamentably lacking in the very sensitivity to human variability which is essential in his own personal make-up. His estimate of the symptoms, in fact, depends to a large extent on his capacity for self-analysis, and the continued study of his patients' symptoms must be accompanied by a personal stocktaking at regular intervals. During this time of growth, he must be willing to admit, at least to himself, that he might be wrong, that what he was brought up to believe, both in morals and in medicine, might also be wrong, and that his adjustment to the dictates of authority is a requisite and natural result of his own development, ending, let us hope, in freedom of thought.

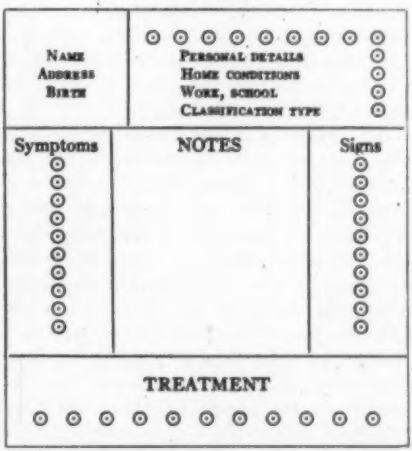
Insofar as this very personal business can be made "scientific,"—and surely it need not remain an arty-crafty, airy-fairy business altogether—the study of symptoms and their recording can become one of the lifetime interests of every general practitioner. The objective? Well, apart from efficiency in record-keeping, there are herein the elements of research which might disclose the reason or reasons for the development in later life of the chronic disease which incapacitates or kills, especially with regard to cancer, now undoubtedly the captain of the men of death.

From the statistical point of view, it might be considered that a standard form of record-keeping should be adopted, but, as this is so much an individual matter, the general practitioner should be encouraged to develop his own lines of research, and any suggestions given here are but to stimulate the idea. The use of punch-hole cards gives an easy, concise record, one card per patient, the number of holes depending on the number of details the doctor considers necessary. The card is oblong in shape, and the top part will take name, address, and other personal details. Down the left side the holes will indicate symptoms, the right side will indicate clinical signs and x-ray and laboratory findings, and the holes along the bottom of the card will indicate treatment (Table 1). The snipping of the cards into the appropriate hole and the use of a needle selector give a quick return for that particular item, which, with three or four thousand on the list, becomes of possible significance.

As already suggested, the number of holes punched in the card will depend on the items each doctor considers necessary, so that he must make up his own pattern of items for his record-keeping. Symptoms are many and various, and the card could become a most complicated, gigantic white

TABLE 1

PROTOTYPE OF NEEDLE-SELECTION RECORD CARD



elephant, and so defeat its own object. Therefore, it seems advisable to keep to basic symptoms as far as possible and add extra particulars in the central space on the card for "Notes." The commonest complaints of suffering humanity can be listed as follows; pain, headache, backache, cough (dry or productive), dyspnea, catarrh (nasal, bronchial, and others!), indigestion (in various forms and degrees), constipation, diarrhea (less frequently), difficult or frequent micturition, a- or dys-menorrhea, lassitude, lack of concentration, loss of appetite, insomnia, and bad dreams. These are referable to definite systems of the body, and so

the recording could be indicated in this way; but if it is remembered that, in relation to the sympathetic nervous system, the tension of the occasion will show itself where the ganglionic area of the sympathetic is most susceptible, then we could relate these symptoms to the following, viz:—Circle of Willis, coronary artery, solar plexus, ileocaecal valve, and urogenital system. The symptom, in short, is an indication (not always reliable!) of the sympathetic weakness of the individual, and is not necessarily a pointer to an organic lesion. The assessment of the symptom, first, *as* a symptom and, second, in relation to the whole person, is essential in the training of the general practitioner; and his willingness to shoulder this responsibility and become the guide and counsellor of his patient will regain for our profession the respect which, of late, has tended to disappear.

The value of symptoms in diagnosis is considerable, especially if they are protracted and unrelieved. Daily, or at least frequent, contact with the patient, which is possible for the general practitioner but not for the consultant, increases this factor enormously; and, although he may have to expend many patient hours on many patients before he declares the grumbler chronic, he must ever satisfy himself that a true valuation has been made, and all possible means undertaken to "cure" the symptom. Again, bearing in mind that the symptom is often a pointer to tension in the patient, brought about by factors both in himself and his domestic or working conditions, the elucidation of the cause is not necessarily by way of the clinical pathologist, but by the quiet elimination of these factors from his unhappy state. How needful is it, then, for the young practitioner, lately immersed in the major pathology of the hospital service, to adjust his outlook to the more intimate, personal, family problems of his patients, diminishing the pathological and reasserting the physiological outlook on their solution.

Clinical diagnosis.—It is well to remind our young practitioner of the second basic factor in the doctor-patient relationship—the sanctity of the privilege. There may be no need to undertake a clinical examination of the patient, especially at the first interview, but it is the awareness of the experienced practitioner which often determines this need. When the doctor is faced with a large number of patients, as in influenza epidemics, he must use all his senses to spot, as it were, the case which demands the extra care of a clinical examination. At the beginning of his career, however, he will want to examine all his patients, in order to find out, if possible, an organic cause for the symptoms complained of; and he will do this partly because he did it as a routine on all the cases which came into his ward in hospital. There, it was an essential of the routine, necessary because of the major problem the case presented. But now, he must realize that his patient may not want to be examined, that an examination by the doctor is the last thing she thinks of, that she did not really come prepared for an examination, and that her symptoms were surely not so serious as to require taking off her garments!

The approach is different. Whereas, in hospital, the doctor may be granting the patient the privilege of his skill, in practice the patient is granting the doctor the privilege of his privacy. The doctor is having an honor conferred upon him which is sacred; and, although he may have taken the Hippocratic vow (again in a routine manner), his whole personal adjustment—in practice—must be governed by the fact that *he* is the privileged person. Once the mutual trust has been achieved which is necessary for success in practice, then the relationship can proceed with the frankness and fruitfulness of human friendship.

Having decided that a clinical examination is necessary, and having advised the patient of his opinion, the doctor will carry this out either in his consulting-room, or, if the patient prefers it, in the privacy of the patient's home. If the patient is a woman, the doctor will remember to take the necessary precautions, so that the priv-

ilege she has granted him may not be misinterpreted. The young doctor is especially in danger here, because he has still to learn that women are not all angels, and the pedestal they occupied in his youthful idealism may have a base of clay! He may also have become so accustomed to the hospital nurse as chaperone that he neglects to have one in his domiciliary practice; and, though the great majority of womankind may be angelic, forewarned is forearmed.

The practitioner who is born with clinical sense is in the same category as the good farmer, who, using eyes, ears, nose and touch, can size up the state of his beasts. The developing of clinical sense or, perhaps, sensitivity, is possible enough, just as Wordsworth trained himself to become a poet; but the danger of losing even any inherent quality in this direction has steadily increased with the growth of x-ray and laboratory techniques. Hospital residence magnifies this danger, unless the young intern hears some fundamental wisdom from his senior colleagues. But his senior colleagues themselves have often renounced their birthright and depend too much on the tests of the titrater and the shadows of Roentgen. Even if, as a medical student, he were taught the fundamentals of clinical examination, the man going into general practice will almost certainly have to relearn them and make his own working rules, by which to measure up his patients' state. This is a personal matter, but of such importance that it is being emphasized. To look at the tongue, sure reflector of the stomach, to feel the pulse and, while holding the hand, test both heart and personality, to look at the eyes and gauge the nervous system, to feel the skin and estimate the tissue's texture—these, surely, are the primary factors of our clinical examination, and are the basic guides in determining the seriousness or otherwise of the case before us.

The classical quartette—inspection, palpation, percussion, and auscultation—are still worth while. To percuss the lungs, to listen to the heart, to look inside the mouth and inspect the nose and throat, to look at the iris and test the pupil's function, to assess the state of the tympanic membrane, to examine for hernia, and know the pros and cons of the acute abdomen, to train the fingers in vaginal and rectal normality, to determine the need for circumcision, to know the signs of a healthy reflex, to have understanding about varicose veins and deformities of legs and feet; to be able to sum up and give a confident account of one's findings—these, and more also, must be present in the doctor's personal equipment, so that, although by the symptomatic route he may be already half-way to his diagnosis, he can either confirm his first impressions, or, in many cases, change them entirely by virtue of his own detective ability.

In this business of diagnosis, the young doctor may have to reserve judgment for a longer time than his patient would like, and have further investigations carried out before he answers the question, "What's wrong with me, doctor?" This may involve him in laboratory methods, and, for his own peace of mind, he must never neglect to use these, when necessary, to clinch the diagnosis. He should be able to obtain the necessary specimens himself, and to undertake simple urine testing. He should be adept at venupuncture, and, on this point, it is strongly recommended to the young intern that, during his house jobs, he should take every opportunity to do intravenous work himself and not leave this important duty to the nursing staff. Laryngeal and nasal swabs he should do with a facility acceptable both to young and old, giving his patients good reasons why it is necessary to do these. In any case of lung disease, suspect of tuberculosis or cancer, he should see that the right kind of sputum is collected for laboratory examination, and, by so doing, learn the macroscopic appearance of material which the microscope will confirm for him. Likewise, any vomit he should try to see for himself and not take its description by hearsay. Any discharge from

the body becomes his diagnostic concern, and comparing its appearance with the findings of the laboratory should add considerably to his detective pride and joy. If he happens to be unlucky with his laboratory facilities, either because of distance or noncooperation, then the job of examining the specimens will fall upon himself—not so easy, then, to be definitive! But in most practices in this overpopulated island he will have these auxiliary services within reach; and, by showing the right spirit of inquiry and cooperation to the laboratory staff, he will then be enriched by their knowledge, their help, and their willingness to serve him.

Again, the x-ray diagnostic department will be on his side, if the general practitioner does not abuse the privilege of its help. He will have to meet frequent and insistent demands from his patients for an x-ray of this or that part of their anatomy, particularly chest and stomach, and, although in the hospital this may have become an essential in the diagnostic routine, and also in deciding on treatment to be adopted, it behooves the general practitioner to sift *his* patients by a sound clinical assessment before he directs them to an already overburdened department. If he can use the service of a miniature x-ray unit, e.g., in the local chest clinic, then he need not hesitate to send his patients for a film of the chest, as this is both quick and cheap, and a cooperative chest physician will usually serve both general practitioner and patients with the same high idealism of the good doctor himself.

However, when all this has been done and the reports are all before him, the general practitioner must remember that he is still responsible for his patient's clinical progress, and, especially when these reports are negative, he must never be lulled into a false sense of security and think that everything in the garden is lovely.

Treatment.—It has already been stated that the boundary line of the general practitioner's responsibility is reached when the malady has passed from the minor to the major category. At that point the treatment becomes the business of the hospital service, which should carry this responsibility with grace, willingness, efficiency, and pride. The general practitioner, on his part, must still exert his personal influence on the result of this treatment by visiting his patient in the hospital and showing him that he is with him every inch of the way. His interest is chiefly personal, and not therapeutic in the scientific sense; but by his tactful approach to those who are now directing the treatment of his patient, he will not only find out where his medical faith can attain its highest degree of assurance, but these very "scientists" will take all the greater interest in *all* his patients because he himself does surely care for them.

The treatment of minor maladies is essentially the business of the general practitioner, and his approach will vary according to his own personal make-up. If, at the outset, he remembers that, in 95 per cent of these cases, the condition is self-limiting, and, given a chance, tends to resolve itself, then he will realize that his job is more that of medical guide and friendly guardian than therapeutic wizard! In short, he is the watchdog, always on duty, to care for the wayward children who are his patients, tending them like a shepherd his sheep, advising them gently but firmly when they appear to stray, and ever aware of the edge of the precipice over which they may fall. If he does realize this basic, fundamental truth, then he is bound to approach the problems of therapeutics with a certain degree of skepticism; but, being an honest man, he must once again prove for himself whether or not such skepticism is justifiable. He will receive, though the post, a daily avalanche of well printed, often luxurious brochures from business firms who want to demonstrate how great is his debt to them by reason of their products—and by-products—placed "freely" at his disposal for the treatment of his patients. He will be tempted to accept their samples and more of their literature, and he will, for a time, fancy himself as an almost original worker

in the trials these clever people initiate. He may not even pause to think about their motives, whether their efforts for himself and his patients are really altruistic.

Therefore—if his inquiring mind will lend itself to this research, as it did, we hope, to the problem of symptoms—he can use his needle-selection record cards to test out his remedies, over a period of years if he wishes, and on as many of his patients as he thinks worth while. To work out his own methods in this research, especially the use of controls, is the interest of the individual doctor; and, if he watches his cases diligently, he will undoubtedly amass enough detail to draw some conclusions about drug therapy. Throughout, he must try to keep an open mind, unbiased by the advertisements and by the articles to be found in both weekly and monthly medical journals, which are themselves written with an enthusiasm which could have a prejudicial flavor. How difficult this is he will find out only by trial and error, but as an exercise in self-discipline it is highly commended.

The problem of drug addiction—or obsession—needs considerable emphasis in the advice and counsel given to the young doctor setting out in general practice. The drug-addict is a person popularly associated with opium, cocaine, and all the "evil" poisons man has invented; but addiction to the bottle of medicine, or "my tablets," or whatever treatment has been prescribed, is now so common that one must stress the great importance of *stopping* the treatment as soon as it is reasonable to do so. This is a formidable task, because the symptom service which has been developed since the inception of National Health Insurance in 1911 and accelerated under the present scheme, is essentially a script-writing service which is neither healthy nor sane. The effect both on the individual patient and on the nation as a whole is incalculable, and the general practitioner must shoulder a major responsibility in its development. For himself, he is facing a decision which can be framed like this: "Am I aiming to be a good doctor, or am I simply the manufacturers' agent and the purveyor of placebos?"

His next problem—to evaluate his treatment—has no easy solution to it. Just because Authority, either professional or commercial, has claimed such and such results, he—young practitioner that he is—must learn to draw his own conclusions, because he alone is responsible from the very start for the assessment of patient, symptoms, signs, and management. Sooner or later, he will realize that the modus operandi of all therapy, no matter how "scientific," is largely through the patient's mind, and, by virtue of that fact, still indeterminate. His treatment—generally relying on drugs—is in effect an off-shoot of faith healing, and he himself the "healer." The patient's faith may be transferred from drug to doctor as soon as the bottle is emptied down the kitchen sink, often untouched, and the placebo may decline as the doctor-patient relationship improves. If the general practitioner is not enough interested in this relationship, then he will carry on his trade of dispensing the drugs, but never develop the vocation of dispensing himself. His education—the leading out of a person what is within him—will be arrested, and he will be no credit to the profession he has joined. If his business is bound up with the benzene ring, then he is really in trade; but, on the other hand, if the seed of the true physician is in his heart, let him cultivate it and make it blossom with uprightness.

No easy task, young doctor, if you choose this difficult path. It means that you must know yourself and, at regular intervals, take personal stock of yourself. This, indeed, is the essence of education, for you surely do not want that process to stop as soon as you become medically qualified. It means keeping your mind open, free to look all around a subject, and, as far is as humanly possible, without bigotry. You must compare yourself with other "healers," for there are many; and if you come up against them—as you are bound to do—refrain from

scorning them if they do not belong to your school of thought. Be generous. Remember that the results in nine cases out of ten will be good, no matter, because these minor ailments heal themselves. Be honest, and inquire into this—the working of the "vis medicatrix naturae"—and, having gratefully acknowledged its power, be ever more watchful of the tenth case.

Furthermore, and apart from all these "medical" healers, do not scorn your clerical cousin who also labors in the fields to serve the same mankind that you do. He, like yourself, was represented long ago by the tribal priest or medicine-man, and only became separated from you when the tribe became too large for one individual to tend. It is well to remember this; and, although by your training you may have gone further along the "scientific" path than he has, when it comes to the relationship you both hold to the public, there is not much difference between you. You have obtained the legal right to sign death certificates, but he has still to perform the last rites. Moreover, with the increase in the tribe in numbers and complexity, the number and variety of both doctors and priests have vastly increased, and you are but one of thousands. If you realize these things, soon rather than late, then the dogmatism of youth will be tempered by liberalism, and your assessment of treatment will become more honest. Your "Ego" may not be so large, but you will have learned to place yourself in another person's shoes, and so appreciate where they pinch!

You must now be aware that, step by step, you are becoming a practising psychotherapist, whether you like it or not. You are your patients' best psychiatrist, you, their general practitioner, their guide and counsellor and friend—surely, if the relationship is right and healthy. But your treatment must be simple, straightforward, sincere, directed to the positive of good function, and away from the negative of apathetic neurosis. You will have to blend sympathy with severity, and be ever watchful for the slothful parasite. When necessity is no longer the driver, and the Welfare State has provided plenty of niches for the sluggard, you are involved in the business of certification—to keep these niches empty! Be careful at all times about the certificates you sign—the easy signature may come back and condemn you before your next night's sleep; and, if you have any conscience at all, you may miss that very sleep! Better to have your conscience clear, even if you lose a patient, because, once your standard is lowered, you will need all the King's horses and all his best men to help you to raise it again.

In troublesome cases, whether psychopathic or not, it is wise to call in a colleague, either another general practitioner, if possible, or a specialist if necessary, so that your trouble is shared and your personal burden relieved. Many of your patients will demand a specialist, and there is little point in arguing about the need for it, under present circumstances, because of the increasing dangers of litigation against medical negligence. You will be amazed at the twists of the human mind, and dismayed at its disloyalty; while, on the other hand, the unexpected gratitude you receive will cause you often to blush at your own inadequacy. Honesty—and a clear conscience between doctor and patient (which, bless you, certainly works both ways)—is still the *only* policy; but, as you are, generally speaking, as your public make you, you run the continued risk of contaminated culture.

Your treatment of your patients carries an enormous responsibility: Are you prepared to accept it?

The use of words—prognosis.—The days are long passed when the doctor could hide behind a sagacious silence! Neither is it necessary for him to have a bald head and a facial mask suggesting that he suffers from hemorrhoids! The doctor must know the meaning of words, how and when to apply them, and to whom. Naturally enough, there are occasions when silence *is* golden, but his function of teacher implies the gift of speech. And, as his pupils vary tremendously in their receptivity, his words must

vary accordingly, so that he puts across as much as they can comfortably assimilate. He will choose a different approach between the laborer of low intelligence and the working-man who shows a sense of responsibility; and, when confronted by a patient whose capacity is high, he will open out his mind to satisfy the truth. This entails an awareness of his patients' mental alertness and sensitivity, so that he uses the right words for each occasion, to avoid hurt to the tenderhearted, and to encourage those who falter. He may find subsequently that what he thought he said is not registered as such in the mind of his patient, and he may have to correct much misconception. This applies not only to what he himself has said, but also to the misinterpretations of broadcast talks and articles in papers and women's magazines. The general practitioner must be an antidote to the sensationalized news about wonder drugs, if he is honest, and bring back to earth the winged credulity of his flock. In an age of chemical miracles, he is the buffer between the modern wizard of molecular juggling and the simpler marvels of natural compost! And he must go on doing this, often with his tongue in his cheek, because mankind, bowing its head to an unknown god, still revels in the miraculous.

Words—like every invention of man, a double-edged weapon! Either as speech or in writing! And as they are dropped in the still waters of the human mind, the ripples they create are often fantastic. We know not how they will come back to us, but they will come, even as the ripples are reflected from the bank. Lucky are we if they return with laughter!

The responsibility we bear in this matter may best be illustrated as follows: Our spoken thoughts are like bacteria, which, on coming into contact with the body, may (*a*) pass right through it unchanged or (*b*) be dissolved by the body fluids and cause no harmful effects, or (*c*) become caught in either lymphatic system or important viscus and set up a disturbance which may be pathological. Our words can react on the minds of our patients in one of these three ways, and although we may, no doubt correctly, look on their mental medium as the primary factor in this relationship, *our* part in the inoculation of that medium is surely considerable. Putting it bluntly, therefore, and as concisely as possible, we, by the very words we use, may be in part responsible for illness in our patients, not only mental but also physical. A sobering thought—which brings us to prognosis.

The approach of the doctor to this problem may be, at the one extreme, as blind as that of the Christian Science healer who is completely unaware of bodily disease whatsoever, right through to the other extreme of inescapable nemesis in a matter of hours or days. The folly of the first has been witnessed by most doctors of any experience who have had to be consulted when there is just enough time left to diagnose the cause of death and complete the necessary certificate. At the other end of the scale, recovery of a patient whose death the doctor has forecast, *may* redound to his everlasting credit, but, when expectant relatives have been cheated of a much-desired relief, then the credit may have to be written in the red! Prophecy is not to be expected from the young, and the old have probably learned by bitter experience not to prophesy; but both patient and relatives will want a prognosis, and the words we utter must be very carefully chosen. Especially when the outlook is hopeless —and there are enough cases like this to give us practice—we must give the relatives due warning of death; but to the patient we must either lie heartily, if he cannot take the truth, or tell him gently that his number is up if he can really face it.

Yes, words are important in general practice, because the doctor has to go on living with their after-effects. When he was in the hospital, his words, maybe ill-chosen and at times careless and callous, affected the patient not a little, but as the patients came and went the doctor himself seldom felt any come-back, although, indirectly, the good name of the hospital might be

just a little tarnished by his remarks. If he does not learn these truths, then he will face in his practice an evergrowing sense of failure, simply because he is unable to say the right number of words to suit the occasion.

Obstetrics—family planning.—It is not many years since the general opinion held that midwifery was best and safest in the patient's home. There has been a shift away from this view, and hospital practice has increased very considerably—for two reasons: first, because the dangers of infection have been practically eliminated, and, second, home-nursing, including obstetrics, has become so difficult to carry out. The balance may swing back again, and the young doctor should be prepared for this. In any case, he should see in domiciliary obstetrics one of the most satisfying activities of his life, positive in its interest, productive in its results, and the very back-bone of family practice. General practice without it, in fact, has lost its mainspring; but, since families, especially in large urban areas, are no longer cohesive units, it is perhaps not surprising that the doctor in a town practice is no longer looked upon as a family doctor. The pity of this, from both aspects, is enormous, and any contribution which the general practitioner can make to the re-establishment of the family in the well-being of the nation is to be encouraged. This means, in short, that general practice should include a healthy interest in sound obstetrics, and parallel with this, a practical outlook on family planning.

There are those who, naturally and inherently, are good midwives. Not only have they the right personal quality, acceptable to the pregnant woman, but they have the hands of the good accoucheur, which possess that happy blend of gentleness and strength just right for the job. There is no doubt that these qualities can be developed, but, unless they are developed, then good obstetric practice is impossible. The happy personal touch in antenatal supervision is of prime importance in developing the confidence between patient and doctor which eliminates fear. The doctor will use this time to teach relaxation, to encourage muscular control, and so direct the energies of his patient that she can tackle her labor in the right frame of mind. In the well directed pregnancy there should be no need for analgesics, for this is surely a physiological process and not a disease.

Although sound clinical sense is the best guide in midwifery practice, the sphygmomanometer does come into its own; and, during antenatal supervision, not only the condition of the urine but the blood pressure curve should be meticulously charted, so that any toxemic rocks may be circumvented during the passage from conception to parturition. This is not the stupid use of a bit of impressive machinery, which, in some hands, becomes the lot of much medical apparatus. Used wisely, this clinical examination provides another field for observational research which, over the years, could be of real value, and also of real interest to the doctor undertaking it.

Apropos of this point—the use of apparatus—it is nowadays being encouraged to have chest x-rays of all pregnant women done as a routine. This is a reasonable suggestion, as long as it is done before half-term, because the film taken during the later stages of pregnancy is more diagnostic of the pregnancy than of a chest condition. Better then to wait until after delivery, when the chest x-ray will assuredly become worth doing.

And now—as in the minor to major malady—it is well for the general practitioner to remember his limitations and, in any case where the physiological becomes the pathological, to call in, without hesitation, the extra help of the obstetric unit of his local hospital. The well equipped unit should have a mobile squad ready to come out at the first intimation of domiciliary trouble or, if not, able to admit to the hospital at once any case where the general practitioner, himself an able obstetrician, needs specialist help. It is again, the tenth case, or rather, in obstetrics, the hundredth case which may call for this

treatment, but it is on the "kudos" of this hundredth case that the good name of *domiciliary* midwifery may depend.

The related problem to what has been said is the practical problem of contraception, that insert in the much larger problem of sexual relationships. For the young doctor whose personal experience is, generally speaking, both reserved and restricted, to give advice to others who are struggling hard with the intimate adventure of connubial adjustment, is as silly as the virgin instructing the harlot in virtue. But, notwithstanding the possible lack of personal experience, the young practitioner should know about the techniques of contraception, so that he can either give the necessary advice and instruction himself, or send his patients to a reputable colleague who can do this for him. The primary need is in those patients who are medically unfit for the burden of pregnancy, but practical sense in the spacing of children and the limiting of the size of a family is of even greater all-around importance in the socio-economic fabric of modern existence. It seems obvious that the general practitioner is in a key position in this most important matter, and he should be fully equipped to play his part in advising and helping in a practical way to plan healthy families. Not to encourage the "no family" idea, rendering the sexual act an indulgence and not a consummation, but to build the family intelligently and not haphazardly. In this way, the doctor's good sense, his tact and patience can often determine the healthy growth of many a nuptial sapling.

Reflections and recommendations.—Keep faith with yourself and the high standards of ethical practice. Self-respect and a clear conscience in your relationships are first essentials. Avoid the bribe, both financial and political, so that you can look at yourself straight in the eye. Keep your mind open and enlarge your mental horizon. Think twice before uttering a dogmatic opinion, and even then remember how often the post mortem has proved us all wrong. Err, if you must, on behalf of your patients, because to err is human, but be ever watchful for the sluggard, the slothful parasite.

Be willing to see the other person's need, and never hesitate to use your colleagues in consultation. If you want respect, you must give it, no matter what the social or intellectual level. There is no limit to your learning, if you are willing; therefore listen and discuss, with Tom, Dick, or Harry. Read when you can, not only the books of your own trade, but also the unorthodox in every walk of life. The history of medicine, devils, drugs, and doctors, the philosophy of Yogi, the teaching of Confucius—never forgetting the Bible, and how many more, to broaden the horizons of human expression and aspiration, of which your own vocation is but a tiny part. Read, and inwardly digest, and you will be stimulated, even by what you might call quackery! But, while adding to your mental stature, remember to maintain a fine detachment. At times take yourself to the lonely places, and "indulge" in solitude.

In your practice approach your patients' problems as if they were your own. Try to see what their troubles really are, but steer the middle course between carrying their burdens—and so killing yourself—and becoming callous. In other words, a blend of sympathy and severity. Remember the "tenth case," which needs all your special knowledge, but be not blind to the other nine who may find their healer in the ranks of the unqualified. Treat them simply, truthfully, and with courtesy, and try to prevent addiction. Use your opportunities to conduct observational research, and be ever patient in gathering your evidence. Do not expect to find a new disease—the fundamental, primary factors are everlasting. Eschew therefore, the false publicity of wonder drugs and the ever-changing tactics of the alchemist! Develop a healthy skepticism, and keep asking questions.

Do not expect to make a large income, but be thankful you can usually exist reasonably well. In the complex financial structure of present-day administration, you will

almost certainly need the help of an accountant; in any case, any relief you can have from the "business" of your profession is worth the cost, and the quarterly cheque from the national purse is surely more acceptable than getting the money direct from the patient. Do not look upon this as easy money—you deserve every penny you receive—but rather take care of the purse and avoid overprescribing.

Take part in the association of your professional colleagues, and mix well. Give of yourself to your societies, and expect little in return—you will be surprised how your bread cast upon the waters can return to you an hundredfold, but *not* materially. Develop your sense of values, and value good sense.

Get away at intervals from "shop." Play games, both outdoor and indoor, and enjoy the sea and the mountains. Have a hobby, e.g., painting, sketching, writing, music, country dancing, or the theatre, and express *yourself*. In the discharge of your personal energy in a creative way, you will be recharged with greater energy, and something indefinable will come to you which surpasses understanding. This entails a continual wonderment, a never-ending desire for the mountain-tops of knowledge. In your vocation you have great opportunities for this, but use yourself to develop them, for *you* are responsible for your own Heaven or Hell.

In the conduct of your personal activities, you will be playing a part in the vitality—or otherwise—of your locality, and the example you give will be far more effective than the precepts you deliver to your patients. In proving to yourself the "modus vivendi," you can the readier teach *your* estimate of truth. It is imperative, therefore, to appreciate both black and white, so that your judgments may be sound.

Walk uprightly, and shoulder your responsibilities.

MEDICAL EDUCATION FORUM

Editorials

HEALTH, WEALTH, AND A CHALLENGE

The words of Will Durant that "the health of nations is more important than the wealth of nations" must have been ringing in the ears of the 85th Congress when it considered appropriations for medical research through the N.I.H. By adding 83 million dollars to the amount requested by the Eisenhower Administration, the Congress appropriated a total of $294,383,000 for medical research during the current fiscal year. To understand the rapidity with which the interest of Congress in medical research has soared, one has only to consider the appropriation of 70 millions in 1950 and of four millions in 1940. A total of 212 million of the new appropriations will be used for grants away from Bethesda, including research grants, training grants and fellowships. That's a lot of money!

An additional 43 million was voted for construction of research facilities to implement the bill calling for 30 million a year for research facilities in schools of the health sciences. The previous bill had expired, and all of us should be pleased that this vital program has been continued.

It is regrettable that funds were not appropriated for the construction of educational facilities. More medical research will require more medical scientists from schools whose physical plants are in many instances already seriously overtaxed. We believe that the medical research effort can never gain full momentum until funds are made available for educational facilities.

It is also regrettable that the proposal to increase overhead allowances on research grants was not approved.

The staggering sums made available to support medical research represent a challenge to medicine—a challenge that we should not ignore. The American people want more good medical research. Practically every family has felt the magic diagnostic and therapeutic touch made possible by medical research. And, now, through the Congress they indicate that they want more. They want major break-throughs in cancer, heart disease, and mental illness. There is the danger that the people of our country may expect too much, too soon, in these very tough fields. But they have given us the tools and the laboratories with increasing generosity. They have given us a 300-million-dollar challenge to produce results.

JOHN Z. BOWERS, M.D.

Comments

REQUIESCAT IN PACE
ANATOMY—THE SCIENCE

J. S. Thompson, M.D.*

Yet one more nail has now been forged to be used in the casket in which, it would appear, many educators would like to inter all that remains of the noble science of Anatomy. The present nail may appear to some of those in Pittsburgh more as a stake to drive through the heart of a witch that has plagued them, but to many it will represent a step which, if followed by other schools, will leave the medical profession much poorer in fundamental knowledge and one more step along the way of unthinking, unreasoning automation.

In the proposed curriculum for Pittsburgh, as published in the June issue of *The Journal of Medical Education* (1), Anatomy and Neuroanatomy are relegated to the status of optional courses (if one is to believe the absence of an asterisk in a table to mean what it is said to mean) while Psychology (as opposed to Psychiatry) takes up 12 compulsory credit hours or twice as much time as basic Physiology. Even "Humanities, Social Sciences" is compulsory.

We have reached the ultimate—a Pittsburgh graduate under the new regime may surely know what mental turmoil a victim of a traffic accident goes through as his life slowly ebbs away while the "broadly educated" doctor strives desperately to find the hemorrhaging artery, or even the pressure point that a knowledge of anatomy would easily provide. Future Pittsburgh M.D.s undoubtedly will leave all trauma cases to the graduates of lesser schools, in fact they should be compelled to do so.

The students there may fully understand the biochemistry of a cell but not know what a cell is. They will endeavor to treat patients with cerebrovascular accidents, not knowing anything of nerve cells and nerve tracts. They will try to learn all about kidney disease without ever seeing a convoluted tubule or glomerulus, and try to understand heart murmurs without having seen a heart valve. They will nod sagely over x-ray films without knowing what the structures, whose shadows are there portrayed, actually look like, and in what manner they are related to each other. Just how Pathology can be made compulsory for students who possess no knowledge of gross and microscopic Anatomy completely defies comprehension.

And yet we cannot claim this step is unexpected. Years ago Anatomy lost all identity as a science in certain schools. Some Anatomists remained, there to join with other scientists to administer a potpourri of pH's, structures, clinical signs, functions, and psychosomatic stimuli which leave the student unaware that Anatomy or Physiology can exist as sciences

Editor's note: Although this contribution was the result of a proofreading error in the article being discussed, Dr. Thompson's comment was so provocative that it is being published nevertheless. See "Reply," by Dr. Moses, p. 812.

* Executive Secretary, Faculty of Medicine, University of Alberta.

in their own right. These schools cannot hope to interest their students in pursuing one of the basic sciences as a career since they are only vaguely aware that these basic sciences exist. (It now appears that many students find they best understand their work by "de-integrating" what has been carefully integrated for them and spending many hours in clandestine study of Anatomy, Physiology, etc., for their own sakes. This statement cannot be substantiated by detailed references, but there is an underground whisper that such things do occur.)

Has the time not come to cry "Hold, Enough!"? Let us keep our doctors as educated scientists and not as technicians with a copious but spotty training in the humanities. Give them, in true scientific manner, the basic understanding of the human body so necessary for the true Scientist-Physician and so unnecessary for the technician. Give them, if you will, a basic concept of the humanities but do not feel that this is a substitute for knowledge of the organism with which they will deal. Let them learn the functions and structures of the body, as the true sciences they are, and then, perhaps, study as entities the diseases which are treated in many ways by many disciplines; here is the place for integration, once the student understands the intricate form, structure, and function of the body. The only way he can understand these is by learning them as firm sciences in their own right.

There is little danger that Medicine, Surgery, or other clinical sciences will lose their identities, since students still learn them in the wards and clinics as individual entities whether or not diseases, instead of subjects, are studied in integrated clinical courses. If, however, the present trend continues and more and more schools completely integrate their early years or, as in Pittsburgh, eliminate whole sciences from the list of compulsory subjects, the students will no longer have an over-all understanding of the body but rather a spotty knowledge of what the then current curriculum committee of the school concerned feels is important.

In the very near future, if the present trend continues, Anatomy, Physiology, and Biochemistry as sciences as such will pass from the medical school scene. For those who think this will be a good thing let me add a word of caution. As these sciences fall into disfavor, recruitment of personnel who wish to make them lifetime careers will also decline. Before long clinicians will have to teach all the basic sciences that the medical student receives, and we will be back to the apprenticeship system. As the sciences are lost so is the need for any association with universities, and soon we will return to the system, and perhaps even the situation, that prompted the Flexner report and the subsequent upheaval in medical education.

Medicine had a difficult path to follow before it was wholeheartedly adopted by the Universities. Let us not, in our haste to change (so that at the next meeting of Deans we too can appear in the forefront), alter too much, too fast, and no longer be worthy of our place in the University community.

REFERENCES

1. MOSES, C.; GREGG, L. A., and DANOWSKI, T. S. Medical Education for Modern Medicine. J. M. Educ. 33:501, 1958.

REPLY*

". . . We couldn't agree more wholeheartedly with him and applaud every effort to increase the ability of the practitioner to practice scientific medicine. Indeed, our proposed curriculum is designed to provide a better grounding in science to accomplish this very goal.

In view of this and the fact that Dr. Thompson bases his critical comments of our proposal on our omission of an asterisk signifying that anatomy is a required subject, it is regrettable that this was our proofreading error and not a calculated decision. Indeed, in Pittsburgh Anatomy has 576 required freshman hours. . . ."

CAMPBELL MOSES, M.D.

School of Medicine
University of Pittsburgh

* Excerpt from a letter from Dr. Moses to Editorial Office in reply to comment by Dr. Thompson.

NEW BOOKS

KENNETH E. PENROD
Book Review Editor

Abstracts

The Kidney. By H. E. DE WARDENER. Boston: Little, Brown & Co., 1958. 310 pp., 74 illustrations. $10.00.

The purpose of this book is to present an outline of renal function and structure of the normal and diseased kidney. It is intended primarily for students but may also prove helpful to others who wish to know more about the subject. At the beginning there is a short description of normal structure and function; and the methods used to obtain information about each are discussed. Then follows a description of the four main syndromes which occur in renal disease, i.e., the nephrotic syndrome, acute renal failure, chronic renal failure, and the acute nephritic syndrome; there is also a section on the relationship between disturbances of renal function and electrolyte disorders. The second half of the book consists principally of an account of renal diseases, including the renal manifestations of some generalized diseases. These are discussed in terms of the patterns of functional disturbance which have been described in the previous sections. For the sake of clarity the author has perhaps oversimplified many controversial subjects and in some instances given only one explanation where several exist. Renal tuberculosis, hydronephrosis, calculi, renal tumors, and certain other predominately surgical conditions have been excluded.

Clinical Neuroanatomy, Neurophysiology and Neurology with a Method of Brain Reconstruction. By LOUIS HAUSMAN. Springfield, Illinois: Charles C Thomas, 1958. 478 pp. $9.75.

The approach to the study of the nervous system and the reconstruction of the brain, herein presented, is from the standpoint of the patient at the bedside. It is based on and represents an elaboration of the method originally described by Adolph Meyer. It has been used over a period of many years in the teaching of students of various levels at Cornell University Medical College and New York University College of Medicine. The fifty chapters are for the most part devoted to individual segments of the nervous system, and the chapter is divided into four parts: Microscopic Study, Reconstruction, Gross Study of the Brain, and Physiology and Clinical Application.

Etiology and Treatment of Leukemia. Proceedings of the First Louisiana Cancer Conference. Edited by WALTER J. BURDETTE. Saint Louis: The C. B. Mosby Company, 1958. 145 pp. $4.00.

Each of the twelve chapters comprising this volume is authored by an expert in the field. Following the formal presentation the discussion entered into by the sixteen participants in the conference is recorded essentially verbatim at the end of each chapter. As much as possible the spontaneity and flavor of the original presentation has been retained. A bibliography of 380 references has been included.

Atrial Arrhythmias, Digitalis and Potassium. By BERNARD LOWN and HAROLD D. LEVINE. New York: Landsberger Medical Books, Inc., 1958. 207 pp. $6.90.

The material of this book is based upon numerous animal experiments and upon a clinical experience extending over more than a decade. In this period the authors have observed and analyzed 150 episodes of P. A. T. with block. They have decided that, since they have advanced a number of new concepts, it was better the material be consolidated in one volume rather than broken up and presented in a number of lesser articles. In this way the reader is given the opportunity of examining all the

facts critically and determining for himself whether the interpretations and conclusions are justifiable. All clinical material presented here is derived from the files of the Peter Bent Brigham Hospital. The cases are highly selected to emphasize not accomplishment but glaring error. This self-critical appraisal of error is conducive to knowledge and progress. The improper and erroneous practices highlighted here reflect not the deficiencies of a dedicated medical staff but rather the state of knowledge at the time. Principle emphasis is on the digitalis-provoked atrial arrhythmias. The electrocardiographic, clinical, and biochemical points of view are stressed.

How To Live with Diabetes. By HENRY DOLGER and BERNARD SEEMAN. New York: W. W. Norton & Company, Inc., 1958. 188 pp. $3.50.

This book is for diabetics and those relatives and friends of diabetics whose lives may be touched by the disease. Its major emphasis is on the person with diabetes rather than on the ailment or condition. While it deals with the question of diagnosis and treatment, the book is more concerned with the human factors, the problems of daily living as they relate to growing up, work, marriage, sex, aging, and the means of adjusting to the numerous physical and emotional demands of the disease. In the main, attention is directed to those phases of the disease which the patient can help control. Certain complications which cannot be influenced by any direct contribution on the part of the diabetic are omitted. This is no do-it-yourself manual and makes no effort to show the diabetic how to treat the disease on his own. Instead it is designed to help the reader understand diabetes on a medical as well as on a personal level. It deals with the medical aspects of the disease—its development, course, and vagaries—so that the reader will be able to appreciate the principles behind the treatment prescribed by the physician and why sudden changes in treatment may be ordered. Altogether, the function of this book is to help the diabetic live with his disease. This requires the fullest possible understanding of the ailment, the medical principles underlying its management, problems it imposes on the patient and his family, and how these problems may be managed. Such an understanding should help arm the diabetic to face his disease on the best possible terms.

Mirror to Physiology, a Self-Survey of Physiological Science. Edited by R. W. GERARD. Washington, D.C.: The American Physiological Society, 1958. 254 pp.

In 1952 the American Physiological Society began a survey of the physiological sciences in this country. The work was supported by the National Science Foundation. This volume contains the material collected in that survey. It is the contribution of many people, but the final editorial responsibility fell to Dr. Gerard. The details of the survey, the analysis of the data, and the general conclusions derived from the study are followed by twenty appendices containing the detailed information and how it was obtained.

Reticular Formation of the Brain. Edited by HERBERT H. JASPER, LORNE D. PROCTOR, ROBERT S. KNIGHTON, WILLIAM C. NOSHAY, and RUSSELL T. COSTELLO. Boston: Little, Brown & Co., 1958. 758 pp. $16.00.

This book is an outgrowth of the symposium sponsored by and held at the Henry Ford Hospital, Detroit, Michigan, March 14–16, 1957. The symposium was attended by 73 participants, 35 of whom contributed to the program through original presentations or discussions. This symposium is a sequel to a symposium on Brain Mechanisms and Consciousness held at Saint Marguerite, Quebec, on August 23–28, 1953, sponsored by the Council of the International Organization of Medical Sciences. The program was divided into the natural divisions of neuroanatomy, neurophysiology, and behavioral studies. The formal presentations are published, in most cases, as they were presented at the meeting. In every case where it was possible the stenotype transcription of discussion has been reviewed and corrected by the discussant.

'CARDILATE'

'CARDILATE'

SUBLINGUAL TABLETS

ANGINA PECTORIS

"Nitroglycerin and erythrol tetranitrate when administered sublingually are among the most effective of all prophylactic agents available for the treatment of patients with angina pectoris. The comparatively prolonged duration of action of erythrol tetranitrate makes it especially valuable for clinical use."

Riseman, J. E. F., *et al.*: Circulation *17*:22, 1958

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Most closely approximates nitroglycerin in frequency and degree of effectiveness.

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Report of the 69th Annual Meeting of the Association of American Medical Colleges

More than 800 medical educators from throughout the United States, Canada and several foreign countries met in Philadelphia, Pa. for the Association's 69th Annual meeting, Oct. 13–15. Attendance comprised the largest in the history of the Association.

Speaking at the opening session, Dr. Lowell T. Coggeshall, dean of the division of biological sciences, University of Chicago, and AAMC president for 1957–58, advocated direct federal financial support of universities and their medical schools. He said, "properly allocated and controlled" federal support is necessary for "the future health of the country."

Dr. Coggeshall addressing opening sessions

Dr. Coggeshall denied that federal assistance in the form of general funds will endanger university freedom, stating that only "weakness" within the schools themselves can result in a loss of control. He regretted that both government and voluntary health agencies have failed to grant total costs of research programs. He feels that businesses, and particularly those with a direct interest in health, should also provide a greater financial stake than one per cent of the total research funds used by universities. Dr. Coggeshall emphasized the importance of allocating funds for general support, rather than confining them to specific and new research projects.

He suggested the government create an advisory commission to set up long-range educational and research goals, furnishing well-qualified guidance.

In conclusion, Dr. Coggeshall pointed out that his plea isn't for the financial comfort of the medical schools but for the future health of the country.

Alan Gregg Lecture

Addressing those attending the banquet in the Sheraton Hotel's ballroom, Dr. James B. Conant said, "academically talented" students should receive a more intensive high school education approaching that given in Europe. Dr. Conant, president emeritus of Harvard University and former High Commissioner to West Germany, declared that with the right kind of high school training, the future physician could spend his college premedical years getting a broad general education. He therefore urged that members of the medical and other professions help improve the standards of poorer schools by taking a vigorous, informed interest in education.

For the top 15 per cent of American high school students, Dr. Conant advocated a "must" program including four years of English, three years of history and social studies, four years of mathematics, three years of science, and four years of one foreign language.

Dr. Conant said the right kind of education can be provided by "comprehensive" high schools. He recommended eliminating very small high schools through school district reorganization.

Dr. Conant's lecture, first of a series to be given at the annual meeting of the AAMC, was named in honor of the late Dr. Alan Gregg.

Medical Education and the University

Concluding Monday's session, a panel composed of three university presidents and a president emeritus, examined the role of

the medical school in the university. James B. Conant, president emeritus of Harvard University, President Deane Malott, Cornell, Chancellor Franklin D. Murphy, Kansas; and President James L. Morrill, Minnesota, expressed the opinion that there is a need for closer association and greater understanding between the medical schools and their universities.

Recognizing that a medical school "is a source of strength in university legislative askings," President Morrill, at the same time, noted there is a cleavage in its relationship with the university. Thus, he said, the Association of American Universities in its awareness of this problem, feels there should be a meeting of presidents and medical school deans in order to evolve a solution to any existing problems.

Presidents' panel: Drs. James B. Conant, Franklin D. Murphy, James L. Morrill and Deane Malott

Medical schools are making decisions in administrative matters which involve the universities, without taking the policies of the universities into consideration, averred President Malott.

According to Chancellor Murphy, with the increase in admissions to medical schools, there must be a "re-examination of the kinds of personnel in our medical schools and of our teaching methods." Further, it is his opinion that we should also "re-examine the whole pedagogy of medicine." He pointed out however, that doing this will bring us up against professional self-interests and professional pride.

In the general discussion that followed, Dr. Darley, AAMC Executive Director stated, "medical education must face two ways at the same time. It must face toward the profession and it must face toward the university. There is a need for machinery which will permit better communication between medical deans and presidents. The AAMC is the only organization within the framework of which this communication can take place."

AMA and the Medical School partnership

The American Medical Association and the Association of American Medical Colleges have the same ultimate goals, joining us in partnership, asserted Dr. Gunnar Gunderson, AMA's president.

Speaking before the general session, Dr. Gunderson pointed out that "our labors are directed toward the single obligation of maintaining health," and further, "medical practice and medical education have been, are and must continue to have a deep dependence on one another."

To emphasize the "partnership" Dr. Gunderson recounted the accomplishments of AMA's Council on Medical Education and Hospitals which was created nearly 50 years ago, and their continued efforts to maintain their obligation to medical education.

Despite the role of the Council, Dr. Gunderson believes that the viewpoints and opinions of the teachers and educators in their membership are not expressed to a degree commensurate with their numbers and importance. He therefore hopes this will be remedied by "deliberate attention to our affairs, which are also your affairs."

Business Meeting

New AAMC President

For the year 1958–59, Dr. John McK. Mitchell will take over the presidency of the AAMC.

Dr. Mitchell, dean of the University of Pennsylvania School of Medicine, has served on the Executive Council of the AAMC, along with various committees of the Association.

Starting his professional career at Yale's

school of medicine in 1925 as an instructor in pediatrics, Dr. Mitchell moved to Pennsylvania in 1927, where he remained—attaining the position of dean in 1946.

Dr. Coggeshall presided over the meeting held Tuesday morning and requested approval on various actions taken by the Executive Council.

In 1957 the Executive Council voted to enlist the aid for Federal funds on a matching basis for the construction of educational facilities. The attempt failed but the Research Facilities Construction Act was renewed for another three years and the Executive Council has again voted to make a second plea.

Dr. Darley greeting 1958–59 president of the AAMC, Dr. John McK. Mitchell

The Council voted to establish a liaison committee whereby representatives of the AMA Board of Directors, the AMA Council on Medical Education and Hospitals, the Executive Council of the AAMC and selected university presidents would constitute a discussion group for better understanding between the universities and their medical schools.

The Council endorsed the extension of the existing Universal Military Training Service Act for a period of two years from July 1, 1959 through June 30, 1961. In preparing a statement to be sent to the Department of Defense regarding the 1959 Doctor Draft Act, the AAMC is urging Congress to include a provision authorizing the National Advisory Committee to consider and advise on all requests for deferment of medical faculty members who are joined in such a request by their medical school, and to include a further provision authorizing the National Advisory Committee to establish, when necessary, Regional Advisory Committees made up of representatives of medical schools in the regional areas designated to assist it in carrying out its task of reviewing and advising on such deferment requests.

The Council joined with the AMA in setting January 1960 as the date when the so-called list of approved foreign medical schools would be discarded as a measure of a foreign medical graduate's qualification for internship or licensure examinations in the United States, substituting instead screening by the Educational Council for Foreign Medical Graduates.

One of the most significant resolutions approved related to the participation of the pharmaceutical industry in medical education.

The Council has been deeply concerned over the increasing trend of the ethical pharamaceutical industry to approach medical schools through varied programs of questionable value. They have felt assistance to medical education must be separated from the industry's promotional and advertising campaigns if it is to be of significant and enduring value. They therefore passed a resolution whereby the AAMC would seek to meet with leaders of the pharmaceutical industry to discuss their present programs and strive for developing a sound program of industry support which provides contributions that are more direct and of greater value to medical education.

Medical Care Plans

Reporting on behalf of the Committee on Medical Care Plans, Dr. John Sheehan, chairman, brought out the fact that because of the steady diminution of the indigent patient, continuing readjustments are required to insure adequate instruction of medical students, interns and residents. Thus, it was suggested that funds made available through medical service furnished paying patients by residents in the course of their clinical training be used for support of resident-training programs. The Committee maintained that remuneration to the qualified resident for the paying patient is proper

provided he has reached a stage of competency and can assume appropriate responsibility; that he possesses a license to practice medicine in the state where he is serving as a resident; he has the consent of the patient; his fees are deposited in a fund to be used exclusively for the support of such a program; medical service must be rendered in the institution where the residency appointment is held; and the fees do not accrue to the resident providing the medical service.

The Committee, further realizing the needs of modern clinical instruction and noting the major problems confronting the clinical faculties of medical schools, proposed supplementation of the base salary paid by the university or medical school by fees for the medical service rendered. However, such collaborative medical practice is only proper provided the fees are set by the participating physician; that the income from the fees be deposited in a separate fund in the university or medical school; that disbursements are made in accordance with a plan mutually agreed upon by the university and the faculty member involved; and that the physician providing such service is related to the educational and research requirements of the institution.

The foregoing has been referred to the AAMC Liaison Committee with Council on Medical Education and Hospitals for further discussion.

Memberships approved

The following schools were approved for membership in the AAMC: Albert Einstein College of Medicine, University of Florida College of Medicine, and Seton Hall College of Medicine. This now brings the total institutional membership to 86, with 13 schools as affiliated members. Twelve of these are in Canada and one is in the Philippines.

Dr. Coggeshall announced that there is a total individual membership of 2,097 with the approval of the 889 new members voted in at this meeting.

In recognition of their valued service to the development of the AAMC over the many years, emeritus memberships in the Association were granted to Dr. Willard C. Rappleye and Dr. John B. Youmans. Dr. Rappleye retired this year as dean of Columbia University's College of Physicians and Surgeons, and Dr. Youmans, former dean at Vanderbilt, has accepted a position as consultant to the Army.

Foreign visitors attending meeting: left to right, Dr. Ramon Ortuzar, Catholic Univ. of Chile (Santiago); Dr. Antonio Peña-Chavarría, University of Costa Rica; Dr. Magid Iunes, São Paulo, Brazil; Dr. Darley, Dr. D. P. Soedjono, Univ. of Indonesia, Djakarta, Indonesia; Dr. Dattatraya Nagappa, G. S. Medical College, Bombay, India; Dr. O. E. R. Abhayaratne, University of Ceylon; Dr. Jacobus Carolus Kapitan, Univ. of Airlangg, Surabaja, Indonesia; and Dr. Svasti Dai-ngavang, Ministry of Public Health, Bangkok, Thailand.

Election of Officers

Dr. John McK. Mitchell, dean of the University of Pennsylvania School of Medicine, succeeds Dr. Coggeshall as president of the AAMC.

Other medical schools deans elected to office are: Dr. Thomas H. Hunter, University of Virginia, president-elect; Dr. Walter R. Berryhill, University of North Carolina, vice-president; Dr. Richard H. Young, Northwestern University, secretary; and Dr. J. Murray Kinsman, University of Louisville, treasurer.

Elected to the Executive Council to replace Dr. John Z. Bowers and Dr. Thomas H. Hunter are Dr. John E. Deitrick, Cornell University, and Dr. George A. Wolf Jr., University of Vermont.

Future meetings

Next year's meeting will be held Nov. 2–4 at the Edgewater Beach Hotel, Chicago, Ill. Looking into the future, the convention site for the 1960 meeting will be Hollywood, Fla., Oct. 13–Nov. 2. The Queen Elizabeth Hotel, Montreal, Canada will be the setting for the 1961 meeting, with the Ambassador Hotel in Los Angeles, Calif. playing host in 1962.

Corporation support of medical education

Chase Mellen, executive director for the National Fund for Medical Education, outlined the Fund's current picture. Mr. Mellen announced that under the Fund's new Basic Medical Research Program, negotiations were made with the United Community Funds and Councils whereby the Fund would set up a nation-wide program for the support of basic non-categorical medical research. Under the terms of the agreement, the program was to be supported by local united funds and community chests and also by other interested health foundations, etc. The program was approved on July 2, 1958 by the Fund's Board of Directors and the UCFC.

Mr. Mellen emphasized that the program is not intended in any way to compete with the activities of the voluntary health agencies. It is to supplement and strengthen the basic research activities now being carried on by the medical schools. He continued, the Fund is particularly anxious that corporation contributors and all those concerned clearly understand that this new research program is separate and apart from the Fund's campaign in support of its Special Purpose Grants.

Executive Council for year 1958–59: Standing left to right: Dr. G. A. Wolf Jr.; Dr. John F. Sheehan; Mrs. Lotus Barnes, staff; Dr. Richard H. Young, Secretary; Tom Coleman, AAMC Public Relations Director; Dr. John E. Deitrick; and Dr. Walter R. Berryhill, vice-president.
Seated: Dr. Ward Darley, AAMC Executive Dir., Dr. John McK. Mitchell, president; Dr. Thomas H. Hunter, president-elect; Dr. Lowell T. Coggeshall, past president; Dr. Gordon H. Scott; and Dr. Murray Kinsman.

Devereux Josephs, chairman of the board of the New York Life Insurance Company and chairman of the President's Commission on Education Beyond the High School, stated that medical education has become of national concern and federal government support is inevitable. The dangers of federal government support can be met by increasing unrestricted giving from all sources available.

Unfortunately, no single source of unrestricted support such as the corporations will be adequate to meet the needs of medical education. Concluding, he stated the problem of supporting medical education is not whether there should be federal support but only how this support can be kept less damaging.

Mr. Josephs is also a member of the executive committee of the National Fund for Medical Education.

Medical Education in Europe

Dr. Philip Sandblom, professor of surgery, University of Lund, Sweden, compared medical education in Sweden to that of the United States. In Europe the sorting out of students who will enter college begins at age 10 or 11 and only about 10 per cent continue their education in college, and many are eliminated before the end of the college course.

Dr. Sandblom

Medical College Costs

A. J. Carroll, business manager of the State University of New York, Syracuse, earnestly requested the Association to establish a program on medical education cost problems. This would include initiation of uniform policies and practices among the nation's medical schools relating to budgeting, accounting and reporting methods, and a positive approach toward interpreting these costs.

He stressed the need for uniformity in accounting practices in medical schools and stated that a pilot study is under way with an intended goal of devising a uniform financial report from which each medical school may prepare for its own use.

The AAMC recently published Mr. Carroll's "A Study of Medical College Costs" which may be purchased for $1.50.

Annual Banquet

The Association held its annual banquet Monday evening in the ballroom of the Sheraton Hotel.

Highlighting the event were the honors accorded two New York medical educators. Dr. Severo Ochoa received the Borden Award and Dr. Joseph C. Hinsey was chosen as the first winner of the Abraham Flexner Award.

Dr. Ochoa

A professor of biochemistry and chairman of the department at New York College of Medicine, Dr. Ochoa was honored for his work on enzymatic synthesis of ribonucleic acid. The Borden Award, of $1,000 and a gold medal, goes to an outstanding research scientist in this country and Canada each year.

A naturalized American, Dr. Ochoa was born in Spain, graduating with honors from the University of Madrid in 1929. He came to this country in 1941 as an instructor and research associate at the Washington University School of Medicine in St. Louis. He became a research associate in medicine at NYU College of Medicine in 1942 and was promoted to his present position in 1946.

Dr. Ochoa was last year named an honorary doctor of science at Washington University and honorary professor, Universidad Mayor de San Marcos de Lima, Peru.

Also in 1957, he was named an honorary faculty member of the Universidad de Chile, Santiago, Chile.

Vincent du Vigneaud, chairman of the Borden Award Committee made the presentation.

Dr. Rolf C. Syvertsen, dean of Dartmouth's medical school, presented the first annual Abraham Flexner award to Dr. Hinsey in recognition for his long and distinguished service to medical education.

Dr. Hinsey, director of the New York Hospital-Cornell Medical Center, is chairman of the China Medical Board of New York and serves on the governing boards of Memorial Hospital for Cancer and Allied Diseases, Sloan-Kettering Institute and Cornell University. He has been associate editor of the Journal of Neuropathology and Experimental Neurology since 1942. His career includes faculty appointments at Northwestern, Western Reserve, Washington and Stanford Universities. He became dean of Cornell University in 1942 and was elevated to his present position in 1953.

Dr. Hinsey

PRE-CONFERENCE MEETINGS

The 1958 Teaching Institute

The First AAMC Institute on Clinical Teaching was held in Swampscott, Mass., Oct. 7–11. It brought together in national forum 150 participants, who constituted a broad sampling of clinical faculty from U.S. and Canadian medical schools. This Institute was the sixth in the annual AAMC series suggested by Dr. George Packer Berry as a result of earlier conferences on psychiatry and preventive medicine.

Despite some initial skepticism on the value of the Institute approach to discussion of problems in clinical teaching, these clinicians applied the same conscientious and discriminating thought—and the same enthusiasm—to their participation at Swampscott as their predecessors at earlier Institutes on basic science and student evaluation. This Institute was a logical culmination in the series of preceding Institutes; at the same time it laid a solid foundation for future Institutes and provided a natural transition to the Second Institute on Clinical Teaching, to be held in Chicago in 1959.

The 1958 Institute evolved under the chairmanship of Dr. Julius B. Richmond, College of Medicine, State University of New York at Syracuse, and was broadly conceived to focus on three areas, each headed by a member of the Planning Committee: (1) Objectives of Clinical Teaching, Dr. Stewart G. Wolf Jr., University of Oklahoma School of Medicine; (2) The Setting of Clinical Teaching, Dr. Charles G. Child, III, Tufts University School of Medicine; and (3) The Student, the Patient, and the Teacher, Dr. Charles A. Janeway, Harvard Medical School. The AAMC Institutes are planned under the aegis of the Committee on Research and Education and administered through the office of Dr. Helen Hofer Gee, Director of Research for the Association. The *Report of the First Institute on Clinical Teaching* is scheduled for publication in October 1959 and will appear as a supplement to this journal.

Initial Meeting of the Medical School-Teaching Hospital Section

Eighty of the 97 medical schools in this country and Canada were represented at the initial meeting of the Medical School-Teaching Hospital Section held in Philadelphia Friday and Saturday, October 10–11, prior to the Annual Meeting of the AAMC.

The program for this initial meeting was divided into three major topics of interest to the teaching hospitals and began with an introductory session chaired by Dr. Gerhard Hartman, superintendent of the University Hospitals, Iowa City, Iowa. Dr. Robert A. Moore, president of the Down-

state Medical Center, State University of New York, and past president of the AAMC, outlined the program and philosophy of the Association itself. Dr. Hartman explained the reasons behind the creation of the Medical School-Teaching Hospital Section; and Dr. Edmund R. McCluskey, Vice Chancellor of the Health Professions, University of Pittsburgh Medical Center, climaxed the session with a discussion of the "Significance of the Medical School-Teaching Hospital Relationship."

The second session was devoted to a discussion of "The Changing Pattern of Medical Education." The basic problem was outlined by Duane E. Johnson, hospital administrator, University of Nebraska College of Medicine. This was followed by a discussion of the implications of this problem to the medical school, the hospital and to medical practice, by Dr. W. Clarke Wescoe, dean of the University of Kansas School of Medicine; Dr. Richard O. Cannon, director of the Vanderbilt University Hospital; and Dr. Edward L. Turner, secretary of the Council on Medical Education and Hospitals, American Medical Association, respectively.

"Private Patients in Teaching" was the theme of the third session of the meeting. "The Statement of the Problem" was presented by Ray E. Brown, director of the University of Chicago Clinics. The problem was then discussed from three specific viewpoints: the hospital, by Stanley A. Ferguson, director of Administration, University Hospitals of Cleveland, Western Reserve University School of Medicine; the medical school, by Dr. Robert A. Moore of the Downstate Medical Center, State University of New York; and the clinical teacher, by Dr. Isidor S. Ravdin, Vice President for Medical Development, University of Pennsylvania, and surgeon-in-chief, University of Pennsylvania Hospital.

Officers elected for the coming year are Chairman: Dr. Gerhard Hartman, Superintendent, University Hospitals, Iowa City, Iowa; Vice-Chairman: Dr. Donald J. Caseley, Medical Director, University of Illinois Research and Education in Hospitals; and Secretary: Duane E. Johnson, Hospital Administrator, University of Nebraska College of Medicine. These men will serve on the Executive Committee of the Section, together with Dr. Lee D. Cady, manager of the Veterans Administration Hospital, Houston, Texas—who will serve for one year; Dr. J. E. Sharpe, superintendent, Toronto General Hospital, who will serve for two years; and Dr. Philip D. Bonnet, administrator, Massachusetts Memorial Hospital, who will serve for the three-year term.

New officers and members of the Executive Committee of Medical School-Teaching Hospital Section, standing left to right: Duane Johnson, secretary; Lee Cady; Gerhard Hartman, chairman; Philip Bonnet; and J. E. Sharpe. Missing from the picture is Donald J. Caseley, who was named vice-chairman.

NEWS FROM THE MEDICAL SCHOOLS

Albany

The college's second annual Honorary Lectureship Award was presented to Dr. PAUL A. WEISS of the Rockefeller Institute for Medical Research. The award, given in recognition of "distinguished service to mankind in the fields of science, medicine and teaching," consists of an honorarium and inscribed plaque. Dr. Weiss, best known for his study of grafting and storing nerves, has been with the Rockefeller Institute since 1954 and is a member of the President's Science Advisory Committee, as well as chairman of the National Committee of International Union of Biological Sciences and consultant to several Federal agencies.

Bowman Gray

Dr. HOWARD H. BRADSHAW, professor and director of the department of surgery, was named chairman of the Board of Governors of the American College of Surgeons at the Clinical Congress held recently in Chicago. Dr. Bradshaw, first elected to the Board in 1948, has been secretary since 1954. He is a founding member of the North Carolina Sectional Chapter of the Congress. Recently named examiner on the National Board of Medical Examiners and the American Board of Surgery, he was appointed associate editor in surgery of *Geriatrics*. During the past summer, he was named by the National Institutes of Health as consultant to the National Cancer Institute.

A postgraduate course on "Emergency Diagnosis and Treatment" is being offered at the school of medicine November 14 and 15. The course, approved for credit by the North Carolina Academy of General Practice, is designed to cover the more common medical and surgical emergencies encountered in general practice with emphasis on immediate management.

The election of Dr. RICHARD C. PROCTER, assistant professor of psychiatry, as secretary-treasurer of the Southern Psychiatric Association, took place at a recent meeting of the Association in Nashville, Tennessee.

Dr. HAROLD D. GREEN, professor of physiology and pharmacology, is serving on the Postdoctoral Fellowship Committee of the National Science Foundation.

Announcement was recently made of the appointment of Dr. WINGATE M. JOHNSON, professor of clinical internal medicine, to the North Carolina Governor's Coordinating Committee on Aging. Dr. Johnson is also a member of the Committee on Aging of the American Medical Association.

California (San Francisco)

Dr. SEYMOUR M. FARBER, head of the continuing education program in medicine and the health sciences since 1955, has been named an assistant dean of the school of medicine. Postgraduate medical education will continue to be Dr. Farber's area of special responsibility, in addition to his duties as associate clinical professor of medicine and chief of the University of California Chest Service at San Francisco General Hospital. He is also president-elect of the American College of Chest Surgeons.

Chicago Medical

The newest addition to Chicago's West Side Medical Center was recently begun with the construction of a ten-story, block-long building which will be erected at a total cost of approximately $4,000,000. The structure, scheduled for completion in the Fall of 1960, will provide research facilities for over

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400 scientists, technicians and postgraduate students. This building is the first of the school's planned ten-acre campus of buildings which will include a College of Physicians and Surgeons, a research hospital, nurses' residence, student quarters and faculty housing.

Dr. RACHMIEL LEVINE has been appointed professor of medicine. Previously director of the department of metabolic and endocrine research, chairman of the department of medicine and director of medical education at Michael Reese Hospital in Chicago, Dr. Levine was named Upjohn scholar of the Endocrine Society last year as consultant to the National Science Foundation for the panel on regulatory biology.

Dr. JAY A. SMITH, associate professor of physiology and pharmacology, is the newly appointed chairman of the Committee on Television and Radio of the Chicago Technical Societies Council. Dr. Smith is a delegate to the Council from the Society for Experimental Biology and Medicine. As chairman of this committee, he has planned a series of four television programs for broadcast on Chicago's educational television channel. The series, called "Science Headlines," features scientists of the member societies of the Council in newsworthy topics on which science has a bearing.

Colorado

Specialists in diseases of the heart and lungs, representing 15 states, attended a postgraduate course on Cardiopulmonary Diseases in Denver recently. Co-sponsored by the University of Colorado School of Medicine, the Colorado Chapter of the American College of Chest Physicians, the Colorado Heart Study Club, Fitzsimons Army Hospital and National Jewish Hospital, the course covered three main categories: laboratory study of patients suffering from heart or lung disease, coronary artery disease, and lung diseases.

A series of condensed one-day refresher sessions covering modern advances in the medical care of children was inaugurated recently for Colorado's practicing physicians by the department of pediatrics. The series, which will be held the first Friday of each month, has been arranged to accommodate physicians living in Colorado and neighboring states. A featured speaker on the first program in early October was Dr. MILTON J. E. SENN, professor and chairman of the department of pediatrics, Yale University School of Medicine, whose subject was "Counseling in Pediatric Practice."

Columbia

Former President Herbert Hoover, honorary chairman of the new advisory board of the university's Institute of Nutrition Science, opened the first meeting of the Board at the Waldorf-Astoria Hotel. The Institute, with headquarters in the school of public health at the Columbia-Presbyterian Medical Center, was created "to meet the worldwide need for properly trained experts to combat problems of nutrition." Its plans include cooperative activity with institutions in foreign countries.

Georgetown

Dr. DESMOND O'DOHERTY, associate professor of neurology, has taken over the duties of Dr. FRANCIS M. FORSTER in the direction of the department of neurology. Dr. Forster, chairman of the department and former dean of the medical school, has resigned to accept a position as director of the department of neurology at the University of Wisconsin.

Harvard

Dr. JACQUES L. MONOD, head of the department of cellular biochemistry at the Pasteur Institute, Paris, delivered the second 1958 series of Dunham Lectures at the Harvard Medical School in October. Reporting on his research at the Pasteur Institute over the past ten years, Dr. Monod outlined the contributions of normally harmless bacteria to a clearer understanding of ways in which life is maintained through

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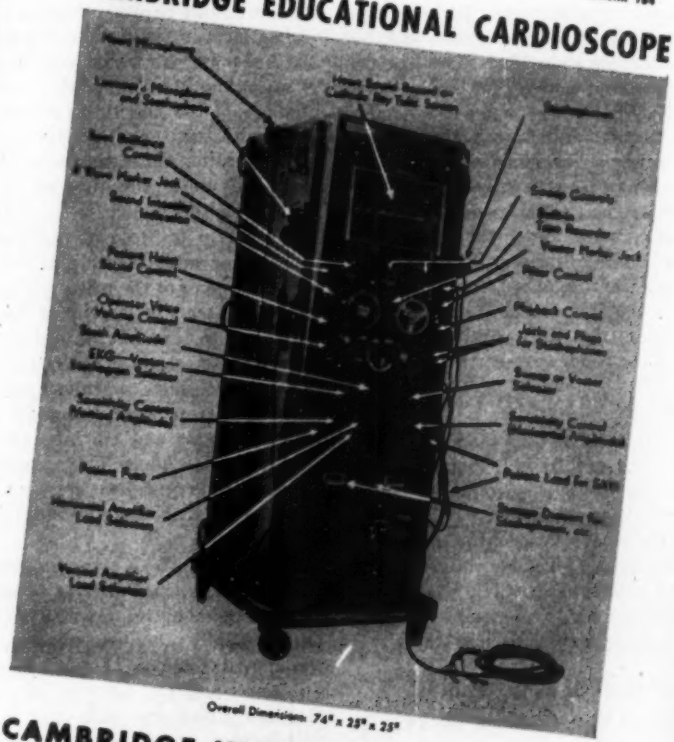

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constant chemical reaction in the cells. The general theme of the lectures was "The Natural History of a Bacterial Enzyme System." Dr. Monod, who has been with the Pasteur Institute since 1945, is best known for his extensive studies of bacterial growth from cultures, for his demonstrations of adaptive enzyme formations in bacteria and for his studies of protein synthesis.

Dr. A. BAIRD HASTINGS, faculty member in the department of biochemistry for 23 years, will retire on December 31, 1958, as Hamilton Kuhn Professor of Biological Chemistry, Emeritus. On January 1, 1959, he will join the Scripps Clinic and Research Foundation at La Jolla, California, as a member of the resident research staff.

Jefferson

Announcement has been made of the appointment of Dr. PHILIP J. HODES as professor and head of the department of radiology and attending radiologist of Jefferson Hospital. Dr. Hodes, formerly on the faculty of the University of Pennsylvania Medical School and Graduate School of Medicine, is chief consultant for the Veterans Administration for an area covering five states.

College of Medical Evangelists

In March of 1959, President GODFREY T. ANDERSON, will leave for a round-the-world tour of education and medical centers. The trip, which is expected to extend from eight to twelve weeks, will include stops in several Far East countries, India, the Near East and Europe, and is related to the College's program of having its key administrative staff persons become "personally acquainted with the needs in overseas educational and medical establishments."

Michigan

An Institute on Veterinary Public Health Practice was recently held at the school of public health. The Institute, which was designed to "explore, document and expand upon the contributions of veterinarians to human health," was planned over a period of two years with the assistance of 15 national and international agencies, including the Pan-American Sanitary Bureau, American Public Health Association, Departments of the Army and Air Force and the Food and Drug Administration. The complete proceedings of the Institute's eleven sessions, along with the committee reports and transcripts of the discussion sessions, will be published under the title of "Veterinary Public Health Practice."

Dr. HUGH B. ROBINS, newly appointed professor of public health practice, has been named director of the recently organized research and teaching service of the school of public health. The first project of this service will be the study of the changing trends in the public health movement and their impact on the operating programs of public health agencies and teaching programs in public health schools. This research will be financed by a five-year grant of $167,620 from the W. K. Kellogg Foundation, Battle Creek.

Dr. JEROME W. CONN, professor of internal medicine and director of endocrinology and metabolism, was selected as one of two nationally prominent physicians to give the annual Shannon Lectures in Medicine. Dr. Conn and Dr. GEORGE W. THORN of Harvard University each gave a series of four lectures on the general subject of endocrinology and metabolism. The lectures were sponsored by the Shannon West Texas Memorial Hospital and given at San Angelo, Texas, in October.

Dr. Conn was also recently chosen for two other professional honors. In June, he delivered the annual Banting Memorial Lecture, highest scientific honor of the American Diabetes Association; and he also was guest speaker for the Chalmers Lyons Memorial Lecture at the August meeting of the American Society of Oral Surgeons.

Missouri

Full accreditation has been granted the University of Missouri Hospitals by the Joint Commission on the Accreditation of

Hospitals. While provisional accreditation had previously been accorded the hospitals, the recent survey by a representative of the Joint Commission brought the first full and unconditional accreditation of the hospitals "for a period of three years or until a subsequent survey is conducted."

New York University

The New York University Medal was presented recently to Sir Harold Himsworth, K.C.B., secretary of the Medical Research Council of Great Britain and a medical scientist, educator and author, primarily in the field of metabolic diseases and nutritional disorders. The medal is presented to distinguished visitors to the university.

A fashion show exhibiting clothes specially designed for the needs of the physically handicapped was recently presented by the Clothing Research Project of the university's Institute of Physical Medicine and Rehabilitation. This Project was originated by Helen Cookman, a designer, and Dr. Howard Rusk, director of the Institute. The styles shown on the program will be distributed nationally.

Dr. Benjamin William Zweifach, at present an investigator of the American Heart Association devoting his full time to research in the college of medicine, has been promoted to full professor in the department of pathology. Although he was trained primarily in cellular physiology and biology, Dr. Zweifach is conducting an extensive research program into the mechanisms of tissue damage and the vascular changes during traumatic shock and in chronic situations such as hypertension. He is a member of the Cardiovascular Study Section and the Subcommittee on Shock of the National Research Council, as well as consultant in microcirculation for different study sections of the Public Health Service and the National Science Foundation.

S.U.N.Y. Brooklyn

A series of ten programs for the physician who encounters children and adults with hearing problems in his practice is being conducted this Fall by the division of otolaryngology. Subjects of the programs include early detection of hearing loss, the goals of audio-surgical procedures, the selection and fitting of hearing aids, auditory rehabilitation of the hard-of-hearing patient and other aspects of clinical audiology important to the physician.

Dr. Hector Mazzella, professor of physiology at the school of medicine in Montevideo, Uruguay, has been appointed visiting professor of physiology at the Downstate Medical Center.

S.U.N.Y. Syracuse

Formal dedication of the newly reconstructed Basic Sciences building took place recently with the completion of construction of three new wings and fourth floor. Designed for four classes of 100 medical students each, the Basic Sciences building contains complete medical science instructional facilities as well as quarters for faculty and student research projects. The structure is the nucleus of the Upstate Medical Center which is eventually to include colleges of nursing, dentistry, medical technology and other related health fields.

Dr. Gordon K. Moe, professor and chairman of the department of physiology, recently received the University of Minnesota's outstanding achievement award. Dr. Moe, who is known for his heart and blood vessel research, was graduated from the University of Minnesota and has been chairman of the physiology department of the Upstate Medical Center since 1950. His varied career has included service on a medical teaching mission of the Unitarian Service Committee and the World Health Organization to Israel and Iran. He is a consultant to the Army Medical Center and chairman of the Section on Medicine of the American Association for the Advancement of Science.

A five-day postgraduate course in endocrinology and metabolism was recently presented at the Medical Center in cooperation with the Endocrine Society. The course

consisted of panel discussions with case presentations and lectures by 29 clinicians from all over the country.

North Carolina

Dr. EDWARD C. CURNEN, chairman of the department of pediatrics, represented the American Academy of Pediatrics and the American Pediatric Society at a national conference on hospital-acquired staphylococcal diseases in Atlanta, Georgia. The conference was called by the Surgeon General of the Public Health Service Communicable Disease Center and the National Academy of Science of the National Research Council.

Dr. ROBERT A. ROSS, chairman of the department of obstetrics and gynecology, was named president-elect of the American Association of Obstetrics and Gynecologists at the 69th Annual Meeting of the Association at Hot Springs, Virginia. Dr. Ross is also presently serving as Vice President of the American Gynecological Society.

University of Pennsylvania

Construction began last month on the new $3,100,000 building to be devoted solely to medical science research. The structure, scheduled for completion in approximately a year, is the first of two buildings which will eventually tie together physically the basic science departments of the biological sciences and medical sciences. Classrooms, libraries, laboratories and administrative offices of the school of medicine building, laboratories of the medical research building and the college's departments of biology and zoology will all be inter-connected. Construction is being financed by the University and the Public Health Service under the Federal Research Facilities Act.

Announcement was made recently of the election of Dr. HENRY L. BOCKUS, chairman of the department of internal medicine of the graduate school of medicine, to membership on the Executive Committee of MEDICO (Medical International Cooperation). MEDICO, a division of the International Rescue Committee, is a private, non-profit organization which furnishes American medical personnel, techniques, drugs and supplies to the newly developing countries of Asia, Africa and Latin America.

Rochester

Dr. JAMES W. BARTLETT was recently named assistant dean of the school of medicine and dentistry. In addition to continuing his duties as instructor in the department of psychiatry, Dr. Bartlett is now in charge of admissions and is assisting in the administration of scholarships and loans.

Dr. ROBERT B. DUTHIE of the Institute of Orthopedics, Royal National Orthopedic Hospital, London, England, has been appointed professor of orthopedic surgery and head of the department. Dr. Duthie has had clinical, teaching and research experience in England, Scotland and Malaya.

The Gold Medal of the Medical Alumni Association was awarded to Dr. WALLACE O. FENN, professor of physiology, at the Association's annual meeting in October. The medal is awarded each year to a faculty member "in recognition of his integrity, inspiring teaching, and devotion to medical students." Dr. Fenn was recently appointed to a four-man committee of scientists to propose a U.S. program for the international control of space exploration.

Southern California

Dr. SAMUEL I. RAPAPORT, research scientist in physiology and hematology and specialist on blood coagulation, was recently named an associate professor of medicine.

Tulane

"The Structure and Function of Social Roles in the Doctor-Patient Relationship" was the subject of the first series in the newly created lectureship in social psychiatry. The lectures, which will be published in monograph series, are jointly sponsored by the department of psychiatry and neurology and the department of sociology and anthropology and supported by the Mona Bronfman Sheckman Foundation. Guest

lecturer for the first series was Dr. John Spiegel of the department of social relations, Harvard University.

Virginia

Dr. BYRD S. LEAVELL, professor of internal medicine, has been named assistant dean. Dr. Leavell, who succeeds Dr. HENRY B. MULHOLLAND, has been a member of the faculty since 1939, and professor of internal medicine since 1954. Dr. Mulholland, retiring from his administrative duties, will continue his teaching duties as professor of internal medicine.

Wisconsin

A new Rehabilitation and Respiratory Center will be activated under the direction of Dr. ARTHUR SIEBENS, who was formerly on the faculty of the Downstate Medical Center of the State University of New York.

Dr. GERNOT B. RATH, of Bonn University, Germany, has been appointed visiting professor of history of medicine for the second semester 1958–59. Dr. Rath received his M.D. degree at Bonn in 1948 and turned to the history of epidemics, anatomy in the Middle Ages and medical writing in the sixteenth and seventeenth centuries.

Dr. FRANCIS M. FORSTER, former dean at Georgetown University Medical School, was named chairman of the department of neurology. Dr. Forster has been associated with hospitals in Cincinnati, Boston and Philadelphia. His academic career includes faculty appointments at Harvard, Yale, Boston, Jefferson, and Georgetown universities.

Dr. JOHN H. FLINN was named associate professor and director of the Student Health Service. Before coming to Wisconsin, Dr. Flinn headed the Student Health Department at Evansville College in Indiana.

Yale

The new $1,165,000 Hunter Radiation Therapy Center for research and treatment of cancer and other diseases was recently dedicated at the Yale-New Haven Medical Center. Among the facilities housed in the four-story structure is a two-million electron volt Van De Graaf x-ray generator. The radiation therapy center and the tumor clinic occupy the first two floors while the top two floors provide laboratory space for the departments of pediatrics and medicine of the Medical School. Main speaker at the dedication was Dr. Lee D. Farr, director of the Medical Institute of Brookhaven National Laboratory, who spoke on "The Future of Radiation in Medical Science."

Dr. KENNETH D. KEELE, consultant physician at the Ashford Hospital, Middlesex, England, has been appointed visiting professor of the history of medicine. A graduate of the St. Bartholomew's Hospital Medical School, Dr. Keele is a fellow of the Royal College of Physicians, and a member of the Royal College of Surgeons.

Toronto

A postgraduate course of instruction in medical bacteriology is being inaugurated this Fall in the school of hygiene, the university's center for public health. Supervision of the course, which will prepare graduates for the Diploma in Bacteriology, is being taken over by Dr. A. J. RHODES, director of the school of hygiene.

ITEMS OF CURRENT INTEREST

Atomic Energy Commission

A brochure listing the research opportunities available to college and university scientists, to be carried out in Oak Ridge, Tennessee, has been issued by the Oak Ridge Institute of Nuclear Studies. These research opportunities are made possible through the Oak Ridge Participation Program administered by the Institute for the U.S. Atomic Energy Commission. They involve the application of nuclear energy to basic sciences and medicine, utilizing facilities not generally available to any single university or college. Copies of the research-participation brochure are available on request from the University Relations Division, Oak Ridge Institute of Nuclear Studies, P.O. Box 117, Oak Ridge, Tennessee.

Air Force

Colonel John E. Pickering, recent winner of the Legion of Merit medal for his work in the field of nuclear research and development, has been named director of medical research at the Air Force School of Aviation Medicine. In his new post, Colonel Pickering is responsible for formulating school research policies, plans and directives and is responsible to the school Commandant for all research activities within the institution.

Dr. Lawrence E. Lamb, professor of medicine, department of internal medicine at the School of Aviation Medicine, has been awarded an outstanding performance rating. The rating, which is accompanied by a cash award of $300, was presented to Dr. Lamb in recognition of his "important contributions to cardiology in general and to cardiology as applied to aviation medicine." Dr. Lamb is a specialist in treatment of the heart and the circulatory system.

New Center for Rehabilitation Services Established

New York University and the Institute for the Crippled and Disabled recently agreed to undertake joint efforts in rehabilitation research, teaching and services to the handicapped. While the University and the Institute will continue to function as financially independent, self-controlled institutions, their professional rehabilitation activities will be coordinated through NYU's recently created Center for Rehabilitation Services, which operates under the direction of the office of the university's executive vice president. The Center will integrate the various rehabilitation programs conducted by NYU's individual schools and colleges with the comprehensive program of the Institute for the Crippled and Disabled. In addition, it will serve as the central planning body for new programs of research, teaching and patient care which involve the University and the Institute. The operations of other rehabilitation organizations that become affiliated with NYU will be integrated with existing activities by the Center for Rehabilitation Services.

Department of Health, Education and Welfare

Dr. Leroy E. Burney, Surgeon General of the Public Health Service, recently announced approval of 98 grants totalling $13,168,307 as part of this year's $30 million appropriation for the health research facilities program. This program, which was extended for an additional three years by the 85th Congress, provides matching funds to public and non-profit hospitals, medical schools and other research institutions to encourage further expansion of the Nation's health research facilities.

A marked increase in grant support of training to increase the supply of skilled workers in the mental health field is reported by the National Institutes of Mental Health. Thirty new training grants, totalling nearly $400,000, have been awarded, with special emphasis on child development as well as physiological and social development in the human personality. Continuing programs include support of professional training for mental health clinical specialists, and additional support for psychiatric training for nurses in 71 collegiate schools of nursing.

Dr. H. van Zile Hyde has been appointed Assistant to the Surgeon General of the Public Health Service for International Health. Dr. Hyde, whose new responsibilities include liaison with the Department of State and other governmental agencies concerned with international health, will continue to represent the United States on the Executive Board of the WHO, a position to which he has been appointed by President Eisenhower.

Succeeding Dr. Hyde as chief of the Service's Division of International Health is Dr. Horace DeLien, who has directed the health program of the International Cooperation Administration in the Philippines for the past seven years. Dr. DeLien played an important part in the extensive postwar rebuilding of the Philippine public health system.

The Public Health Service and the National Science Foundation have announced an increase in stipend rates for research fellowships. The increased stipends, now available for future fellowships, put into effect the recommendations of senior scientists who supported this increase as necessary to sustain the productive research training programs of the two Federal agencies in non-Federal, non-profit research institutions. At the predoctoral level, the stipend will be raised to $1,800 for the first year, $2,000 for the intermediate year and $2,200 for the terminal year. At the postdoctoral level, stipends will be $4,500 for the first year and $5,000 for the second.

Major General Oliver K. Niess has been appointed Surgeon General of the U.S. Air Force, effective December 1, 1958. Currently serving as Command Surgeon of the Pacific Air Forces in Hawaii, General Niess has been instrumental in establishing medical care for U.S. nationals through Southeast Asia.

A recent appointee to the National Advisory Health Council—an advisory group to the Public Health Service—is Dr. Philip Handler, professor and chairman of the Department of Biochemistry and Nutrition at Duke University School of Medicine. Dr. Handler has previously been associated with the Office of Scientific Research and Development and the Life Insurance Medical Research Foundation. He has served as consultant to the Veterans Administration, the Atomic Energy Commission, the National Research Council, and as chairman of the Biochemistry Study Section of the National Institutes of Health.

Francis Boyer, chairman of the Board of Smith, Kline and French Laboratories, has been appointed to a two-year term on the National Advisory Arthritis and Metabolic Diseases Council. The Council advises the National Institute of Arthritis and Metabolic Diseases, one of the seven "institutes" comprising the NIH, on awards to non-Federal Institutions and scientists who conduct research.

Fellowships Available for Nutrition Studies

The Nutrition Foundation, Inc., in cooperation with the Council on Foods and Nutrition of the AMA, recently announced the availability of ten fellowships for medical students for research in clinical nutrition. The awards, consisting of $200 each, will be given to a medical student upon recommendation by a senior investigator. Applications and requests for additional information should be directed to the Council on Foods and Nutrition, AMA, 535 Dearborn St., Chicago 10, Illinois.

PASB Elects New Director

Dr. Abraham Horwitz, who is presently assistant director of the National Health

Service of Chile while on leave from his position as director of the School of Public Health, University of Chile, has been elected director of the Pan American Sanitary Bureau. Dr. Horwitz will begin his four-year term of office on February 1, 1959. He has previously served the PASB at its Washington headquarters where he was Chief of the Professional Education Branch when he resigned to accept his present post in Chile.

National Health Council

The American College of Preventive Medicine has been elected to active membership in the National Health Council. The addition of this association brings to 63 the total number of organizations comprising the Council, which consists of volunteer and governmental health agencies, professional associations, civic groups and business firms having a major interest in health.

American College of Hospital Administrators

At the recent annual meeting of the American College of Hospital Administrators, Anthony W. Eckert, director of the Perth Amboy General Hospital, Perth Amboy, New Jersey, was installed as president. New president-elect is Ray E. Brown, superintendent of the University of Chicago Clinics and former president of the American Hospital Association. Mr. Brown has also served on the planning committee of the proposed Medical School-Teaching Hospital Section of the Association of American Medical Colleges.

National League for Nursing, Inc.

A project to provide additional services to colleges offering programs in professional nursing leading to an associate degree has been initiated by the National League for Nursing. To aid in carrying out the project, the League has appointed Mildred S. Schmidt, R.N., M.A., as consultant in junior college nursing curriculum, and has organized an advisory committee composed of general and nursing educators. The project is underwritten by a grant from the Sealantic Fund through a special gift from John D. Rockefeller, Jr.

PERSONNEL EXCHANGE

Faculty Vacancies

BIOCHEMIST: Applications are invited for the Chair of Biochemistry in the Faculty of Medicine. Minimum qualifications: M.D. with special training in Biochemistry, or Ph.D. in Biochemistry. Teaching and research experience essential. Salary in the range of $10,000, depending on qualifications and experience. Address applications or enquiries to L. G. Bell, M.D., Dean, Faculty of Medicine, The University of Manitoba, Emily & Bannatyne, Winnipeg 3, Man., Canada.

BIOCHEMIST: Teaching and research, department of biochemistry, University of Alabama. Salary and rank depend upon educational background, teaching and research activities. Reply should include personal history, complete bibliography and photo. Address: Emmett B. Carmichael, Department of Biochemistry, Alabama Medical Center, Birmingham 3, Ala.

OBSTETRICS and GYNECOLOGY: Full-time Board eligible instructor for expanding Department Obstetrics and Gynecology in large midwestern university. Ample opportunity for research, teaching and clinical experience. Address: V-68.

FELLOWSHIP IN CARDIOVASCULAR DISEASE: Active participation in cardiac catheterization, cine-angiocardiography, phonocardiography and experimental surgical laboratories. Should have completed internship. Possible later incorporation into surgical or medical residency. Apply to J. G. Mudd, M.D., St. Louis University Hospitals, 1325 S. Grand Blvd., St. Louis 4, Mo.

DIRECTOR OF NARCOTIC ADDICTION FOUNDATION: Applications are invited for the post of full-time Director, with teaching appointment within the Faculty of Medicine of The University of British Columbia. *Qualifications:* Certification in Psychiatry by the Royal College of Physicians and Surgeons of Canada or the American Board of Psychiatry, or their equivalent, and preferably with some experience in socio-psychiatric research. *Duties:* To direct the work of a therapeutic and research team of psychologists, social workers and resident personnel; to inspire and guide a program of treatment, rehabilitation and research where, for the first time, there will be developed a socio-medical approach to the treatment of the drug addict. The program will be one of gradual expansion including long term follow-up services in the social and vocational rehabilitation of the individual. Salary open, dependent on the qualifications and experience. Direct replies to the President, Narcotic Addiction Foundation of B.C., 835 West 10th Ave., Vancouver 9, B.C. All communications treated as confidential.

HISTOLOGIST-EMBRYOLOGIST: Junior appointment suitable for young doctorate, on medical faculty of Canadian medical school in Ontario. Facilities and time for research. Send curriculum vitae with application. Address: V-69.

OPHTHALMOLOGIST: Full-time assistant or associate professorship available in Eastern university medical school. Excellent opportunity for young man interested in academic career. Ample facilities, support and time for research. No private practice required. Address: V-70.

SENIOR PATHOLOGIST: Three hundred forty bed general teaching hospital and large diagnostic clinic, located in the East. All departments adequately staffed by full-time board certified M.D.'s. and Ph.D.'s. Please give full summary of qualifications when answering. Apply to Administrator, Guthrie Clinic-Robert Packer Hospital, Sayre, Pa.

ANESTHESIOLOGIST: Board qualified, to be in charge of midwest university hospital service. Active general, thoracic, and cardiovascular surgical program. Ample research and teaching opportunity, attractive salary. Address: V-71.

PEDIATRICIAN: Full time clinical teacher for department with active student and house staff educational program. Person interested in clinical teaching as a career desired. Considerable small group teaching with less emphasis on lectures. Rank and salary dependent on qualifications. Address: V-72.

VIROLOGIST and IMMUNOLOGIST: Research position in medical school for young Ph.D. interested in immunology and virology to cooperate in a research program as well as to pursue individual interests. Salary depends upon qualifications and experience. Opportunity for teaching. Address: V-73.

To aid in solution of the problem of faculty vacancies, MEDICAL EDUCATION will list persons and positions available, as a free service. The school department or person may have the option of being identified in these columns or of being assigned a key number for each position listed. Mail addressed to key numbers will be forwarded to the person or department listing the request.

Information for these columns should reach the Personnel Exchange, Journal of Medical Education, 2530 Ridge Avenue, Evanston, Illinois, not later than the 10th of the month which precedes the month in which the listings will appear.

Personnel Available

SURGEON: Certified general, thoracic. Age 37, 12 years training teaching hospitals. Publications; interested research, teaching. Desires academic position. Address: A-358.

PHYSIOLOGIST: Ph.D., M.D., 38, presently professor of physiology in prominent Midwestern medical school. Eleven years experience in teaching medical physiology. Over 50 publications in cardiovascular physiology. Investigative interests: experimental hypertension, cardiac output, regional blood flow, transcapillary transfer rates. Experienced radioisotopes. Desires position Middle Atlantic area or Pacific Coast. Teaching position preferred; research position acceptable. Address: A-359.

BIOCHEMIST: Ph.D. 1951. Diversified research experience: physiochemistry and structure studies of proteins, kinetics and thermodynamics of enzymatic reactions, steroid and antibiotic isolation. Chromatography, physical techniques and electronics. Publications. Desires career position in either academic or research institute. Address: A-360.

EPIDEMIOLOGIST: Age 31. M.D., Washington Univ., 1951. M.P.H. Yale 1957 (Dr. P.H. Yale 1959). Desires affiliation with department of preventive medicine and responsibilities for cardiovascular disease, epidemiological research. Available September 1958. Address: A-361.

INTERNIST-PSYCHIATRIC ORIENTATION: Certified, 36, desires to participate in practice of comprehensive medicine. Southwest location. Address: A-362.

MICROBIOLOGIST: Age 33, married. M.S. Bacteriology, 1949, Ph.D. Microbiology, 1958. Publications. Seven years teaching experience. Presently, research fellow in Eastern university. Desire teaching position with opportunity for research. Address: A-364.

CLINICAL NEUROLOGIST: British, M.A., M.D. (Cambridge, England), M.R.C.P. (London). Six years training on staff of National Hospital, Queen Square, London. Consultant neurologist on staff of London hospitals with long experience in research. Author of several books and numerous publications. Teaching experience and lecturing at American universities. Desires post in clinical neurology with facilities for teaching and research at professorial or assistant professorial level. Address: A-365.

PSYCHIATRIC SOCIAL WORKER: Female, single. Social Science and Administration Certificate, The London School of Economics and Political Science, England. Group work, B.S.W. University of Toronto, School of Social Work, Canada. Psychiatric Social Work, M.S.W. and Advanced Curriculum, Univ. of Pennsylvania. Experience in administration (United Nations). One year in residence in a State hospital followed by two years of clinical work in a university setting. Familiar with family centered teaching of medical students and residents. Desires faculty appointment. Available from September. Address: A-366.

MICROBIOLOGIST: Completing all requirements in September for the Ph.D. degree in Medical Parasitology, with a minor in Bacteriology and Immunology. Desires position in medical school teaching microbiology with opportunity for research. Address: A-367.

PATHOLOGIST: Age 44, certified C.P. and P.A. Academic background with extensive teaching experience. Particularly interested in medical and pediatric pathology. Organized and presently operating large department in university hospital. Desires to relocate in major city, east or west coast. Interested in combined teaching-service type practice in university or affiliated hospital. Address: A-368.

EPIDEMIOLOGIST: Age 30, M.D., M.P.H., requirements completed for Dr. P.H. Experience in obstetrics, student medicine, health department and chronic disease research. Desires teaching and research position in medical school department of public health and preventive medicine. Research in many fields; publications. Address: A-369.

MICROBIOLOGIST: Ph.D. Training, experience and publications in bacterial physiology (nucleic acid synthesis) and immunology or immuno-chemistry (antibody formation); several years teaching experience of medical students, nurses and technicians. Desires medical school or other academic position in teaching and/or research. Address: A-370.

NUTRITIONIST-BIOCHEMIST: Ph.D. Physician. Eight years experience teaching medical and graduate students. Associate professor in leading Eastern university. Numerous publications and membership in leading professional societies. Desires medical school position where there is available a combination of pre-clinical and clinical teaching with research facilities. Principal interest and experience in nutritional biochemistry and metabolism. Address: A-371.

PATHOLOGIST: Age 34. Eight years diversified teaching and research experiences. Specialist interest in hepatic pathology. Present faculty appointment. Desires relocating in academic position. Address: A-372.

PEDIATRICIAN-PSYCHIATRIC ORIENTATION: Age 34, certified, F.A.A.P. Five years of private practice. Desires academic position with opportunities for research in psychosomatic aspects of pediatrics. Available July 1959. Address: A-373.

ANATOMIST: Age 35, married. Desires change of position with more time for research, in Canada or U.S. Medical graduate of London Medical School and the English Royal Colleges. Also a London Ph.D. Has had extensive medical experience and surgical training before becoming an anatomist. Since then lectureship in a London school and Senior Lectureship and Readership for six years in a British overseas university. Has had responsibility for teaching, planning and administration. Publications in journals. Address: A-374.

ALLERGIST: Board eligible in medicine. Desires career type opportunity in teaching and research. Has basic training in immunology. Will consider full-time, geographic full-time and half-time opportunities. Address: A-375.

INTERNIST-BIOCHEMIST: Ph.D., M.D. Age 42. Desires opportunity to do research with some clinical work, interested in rheumatic diseases experienced teacher and investigator. Wide scientific background, including radioisotopes, publications. Address: A-376.

ROTATING INTERN: Age 26. Publication co-author. Desires faculty appointment in general surgery. Excellent references. Available July 1959. Address: A-377.

PEDIATRICIAN: Diplomate American Board of Pediatrics. Currently assistant professor; seeking a teaching position in a new location. Address: A-378.

ORTHOPEDIC SURGEON: British, age 36. F.R.C.S. (Edin.) F.R.C.S. (Eng.) Guy's Hospital Medical School, London. Publications, British Medical Journal. Eight years experience. Desires position in American medical school, preferably in orthopedic and traumatic surgery. Prepared to sit any necessary licensure or other examinations. Prefers settling in a maritime state with a warm climate. Address: A-379.

MICROSCOPIC ANATOMIST: M.D., male. Presently associate professor but desires change of locale to upper midwest or west for reasons of health. Seeking academic or research position in medical center or research laboratory. Address: A-380.

PHYSIOLOGIST: Ph.D., 1958, married, three children. Research in circulatory and respiratory physiology. Nine publications; teaching experience with medical and dental students. Desires teaching appointment in New England or New York State, with opportunity for research. Address: A-381.

INTERNIST: Certified; age 33. University trained; currently on faculty of medical school with experience in private practice and industrial medicine. Desires position in teaching hospital with opportunity for clinical investigation in cardio-vascular diseases. Address: A-382.

INTERNIST: Female, age 32; Mayo trained with an interest in hematology. Desires teaching position. Address: A-383.

SURGEON: Age 33, certified general, experience in thoracic and extra-corporeal techniques. University training. Seeks full-time academic position with opportunity for research. Address: A-384.

BIOSTATISTICIAN: Seeking position as member of team in basic medical research or as lecturer to medical, dental, pharmacy and graduate students. Address: A-385.

Individual Membership

in the

Association of American Medical Colleges

In recent years the activities of the Association of American Medical Colleges have expanded far beyond the original considerations of administrative problems to the many and varied problems of medical education as encountered by the entire medical school faculty.

The expansion of activities has been due to the growing complexity of medical education —the swift development of the medical sciences, the rapid accumulation of new knowledge to be taught, the pressure for more graduates, the changing patterns of medical care, and countless other factors.

Because of these factors, the AAMC recognizes the need for a professional organization to represent not only the medical schools but the faculty members of these schools. Through the offering of individual membership, the AAMC provides you with the opportunity to exchange ideas, opinions and information through the Annual Meeting, Teaching Institutes, and other activities of the Association.

The AAMC also encourages you to attend the Annual Meeting, not only to meet with others who are teaching in your field and discussing the educational problems that are peculiar to it, but also with the idea of becoming familiar with the entire field of medical education as one of society's most important enterprises. The time has come when teachers of medicine must meet together and discuss the problems and activities that are peculiar to medicine as education just as they are accustomed to meet and talk about medicine as science.

As an Individual Member you are entitled to receive *The Journal of Medical Education*, the only magazine devoted exclusively to medical education. The Journal also carries the latest news from the medical schools and provides a valuable service through its Personnel Exchange column. You receive the yearly *Directory*, the Proceedings of the Annual Meetings, and *The Medical Monitor*, a newsletter which will keep you informed on items of current interest in the field of medical education, both nationally and internationally.

Individual Membership, at only $10 a year, is open to any person who has demonstrated a serious interest in medical education over a period of years. All the privileges of membership and a provisional membership card are granted immediately after payment of the $10 fee, although confirmation must await official action at the next Annual Meeting.

To obtain membership, fill out the application form below, append check for $10, and return to the Association's central office at 2530 Ridge Ave., Evanston, Ill.

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Field of medical education in which chief interest lies:_____

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_____

PUBLICATIONS

Useful information for both medical educators and students is published by the Association of American Medical Colleges. These publications may be obtained from the Association headquarters office, 2530 Ridge Avenue, Evanston, Ill.

Booklets

Medical Education Today ($1.50).

Admission Requirements of American Medical Colleges—1958–59 ($2.00).

Fellowships, Funds and Prizes Available for Graduate Medical Work in the U.S. and Canada—4th edition, published 1954 ($1.50).

By-Laws of the Association of American Medical Colleges (Revised 1955).

Minutes of the Proceedings of the Annual Meetings (1953–57 Minutes now available).

Public Understanding and Support of Medical Education.

History of the Association of American Medical Colleges—1876–1956

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Journal supplements available:

The National Health Service of Great Britain ($1.00).
Education of Physicians for Industry ($2.00).
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Survey of Women Physicians graduating from Medical School 1925–40 ($1.00).
Suggestions for Supplementing the Medical Curriculum in Time of National Emergency.
Medical Education for Foreign Scholars in the Medical Sciences ($1.50).
A Study of Medical College Costs $(1.50)
El Estudiante de Medicina ($1.00)

Teaching Institute Reports ($2.00 paperbound, $3.00 clothbound).

Report of the Conference on Preventive Medicine in Medical Schools (Report of the 1952 Institute).

The Teaching of Physiology, Biochemistry and Pharmacology (Report of the 1953 Institute).

The Teaching of Pathology, Microbiology, Immunology and Genetics (Report of the 1954 Institute).

The Teaching of Anatomy and Anthropology in Medical Education (Report of the 1955 Teaching Institute).

The Appraisal of Applicants to Medical School (Report of the 1956 Institute).

The Ecology of the Medical Student (Report of the 1957 Institute).

Medical Audio-Visual Institute Publications

Film Catalog, Fall 1955 and Supplements.

Reprints from the Audiovisual News Section of the Journal of MEDICAL EDUCATION.

Films in Psychiatry, Psychology and Mental Health (available from the Health Education Council, 92 Belmont Drive, Livingston, N.J.).

Films in the Cardiovascular Diseases (Part I available from the American Heart Assn.), 44 E. 23rd St., New York 10, N.Y. ($2.00).
Part II available from the Medical A-V Institute ($2.00).

Publications of Related Organizations

Hospitals Participating in the Matching Program 1958 (NIMP).

Results of the Matching Program 1958 (NIMP publication).

The Student and the Matching Program 1958 (NIMP publication).

Medical College Admission Test—Bulletin of Information 1958 (Educational Testing Service publication).

Psychiatry in Medical Education—1951 Conference ($1.00).

The Psychiatrist: His Teaching and Development—1952 Conference ($2.50).

(The above can be obtained from: American Psychiatric Assn., 1785 Massachusetts Avenue, NW, Washington, D.C.).

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